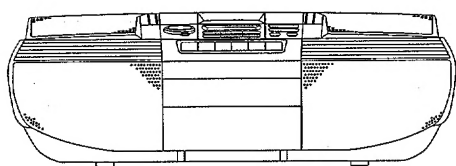


aiwa



CSD-ED88 CSD-ED89 CSD-ED99



COMPACT DISC STEREO
RADIO CASSETTE RECORDER

- BASIC TAPE MECHANISM : TN21ZVC-1816, TN51RV-240
- BASIC CD MECHANISM : KSM-213CDM

- TYPE : 88:<LH>, 99:<HR,EZ>
89:<HA,HR,LH,EZ>

REVISION PUBLISHING

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual", CSD-ED88/89 (88 : <LH>, 89 : <HA,HR,LH,EZ>) S/M Code No. 09-993-409-2T2 and CSD-ED99 <HR,EZ> S/M Code No. 09-993-409-2T3.

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SPECIFICATIONS

Tuner section

Frequency range

FM :

87.5 MHz - 108 MHz

Antenna : Rod antenna

AM<HA,HR,LH> :

530/531 kHz - 1,710/1,602 kHz
(10/9 kHz/step)

MW<EZ> :

Antenna : Ferrite bar antenna
522/530 kHz - 1,611/1,710 kHz
(9/10 kHz/step)

LW<EZ> :

Antenna : Ferrite bar antenna
153 kHz - 288 kHz
Antenna : Ferrite bar antenna

Deck section

Track format

4 tracks, 2 channels

Frequency range

Normal tape : 50 Hz-12,500 Hz
(EIAJ)

Recording system

AC bias

Erasing system

Magnet erase

Heads

Recording/Playback head x 1/
erase head x 1

CD player section

Disc

Compact disc

Scanning method

Non-contact optical scanner
(semiconductor laser)

General

Speaker

100 mm cone type (2),
36 mm cone type (2)

Output

Headphones jack (stereo mini-jack)

Power output

5.0 W + 5.0 W
(DIN MUSIC POWER)<EZ>
4.5 W + 4.5 W <HA,HR,LH>
(EIAJ 3.2 ohms, T.H.D. 10%)
3.3 W + 3.3 W <HA,HR,LH>
(DIN 1% Rated Power)

Power requirements

DC 12 V using eight R14 (size C) batteries,
AC 110 - 120 V / 220 - 240V,
50 / 60 Hz<HA,HR,LH>
AC 230 V, 50 Hz<EZ>

Power consumption

27 W

Dimensions (W x H x D)

507 (W) x 206 (H) x 299.5 (D) mm

Weight

CSD-ED88 / 89 : 4.7 kg
CSD-ED99 : 4.9 kg
(excluding batteries)

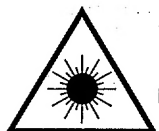
- Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

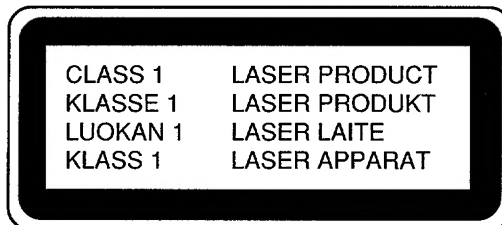
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

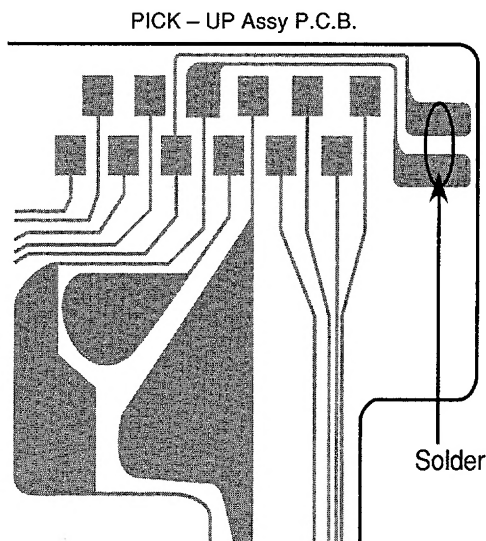


Precaution to replace Optical block

(KSS-213C)

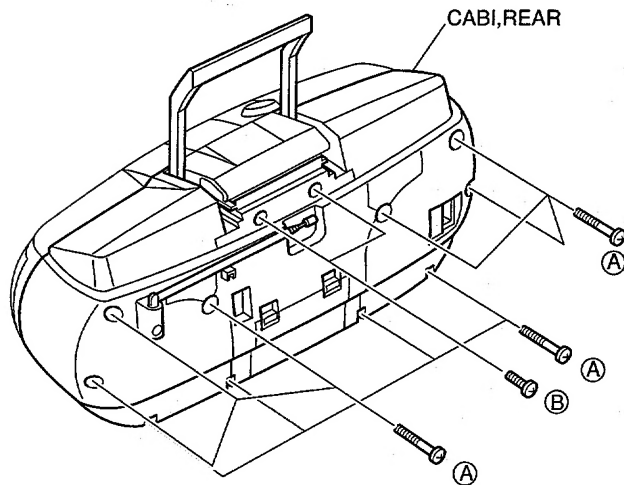
Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure to ground body and workbench, and ensure clothes do not touch the diode.

- 1) After the connection, remove solder shown in right figure.

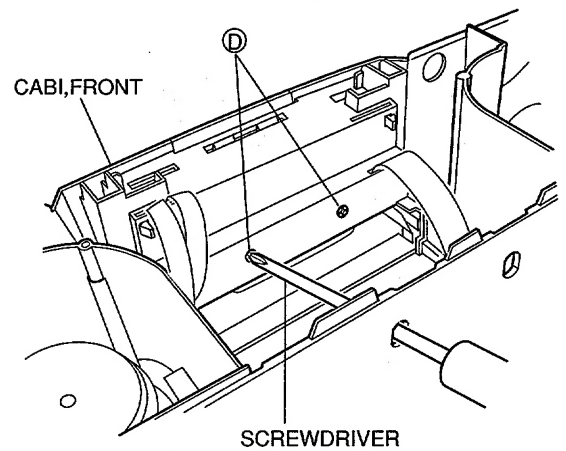


DISASSEMBLY INSTRUCTIONS

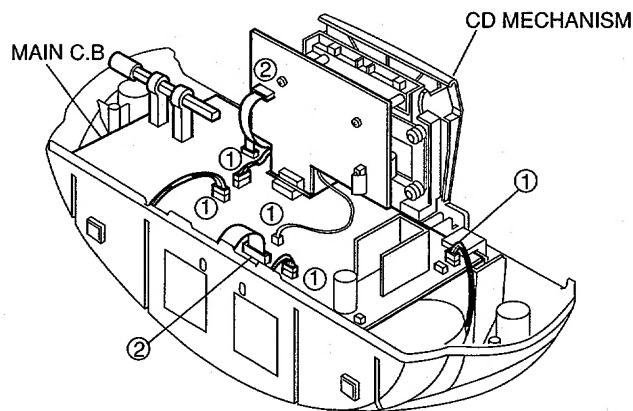
1. Remove screws (A) UT2+3-30x10 and (B) UT1+3-10x2). Holding the rear cabinet, and then remove the rear cabinet.



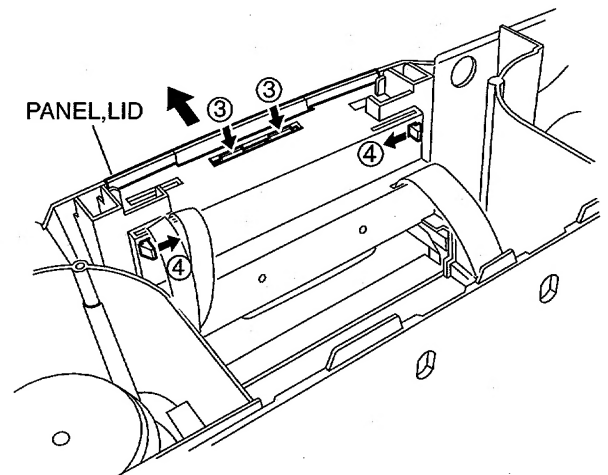
4. Insert a screwdriver into the hole in the front cabinet, and remove screws (D) QT2+3-8x2).



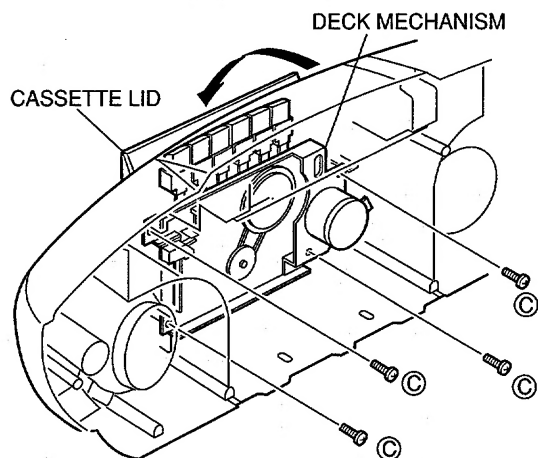
2. Disconnect cord ①x4 and FFC ②x3, MAIN C.B and CD block.



5. Use a flat-bladed screwdriver, etc. to release tab ③. Release tab ④ and push up the operation panel to remove it.



3. Remove screws (C) UT2+3-8x4 that hold the deck mechanism to the cabinet. Open the cassette lid and remove the deck mechanism.



ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO. | PART NO. | KANRI NO. | DESCRIPTION | REF. NO. | PART NO. | KANRI NO. | DESCRIPTION |
|------------|----------------|-----------|-------------------------------|----------|----------------|-----------|----------------------------|
| IC | | | | C18 | 87-015-819-080 | | CAPACITOR, 0.01 |
| | 87-A21-184-010 | | IC, TA2104AN | C19 | 87-010-112-080 | | CAP, ELECT 100-16V |
| | 87-A21-185-040 | | C-IC, LC72121M | C20 | 87-010-404-080 | | CAP, ELECT 4.7-50V |
| | 87-A20-946-040 | | C-IC, MM1434XF | C21 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| | 87-A20-591-010 | | IC, BA5417 | C22 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| | 87-A21-111-040 | | C-IC, M62495FP | C24 | 87-012-157-080 | | CHIP CAPACITOR, 330P-50 |
| | 87-070-416-010 | | IC, NJU7201 L55 | C25 | 87-012-393-080 | | C-CAP, S 0.22-16 K |
| | 87-A20-446-010 | | C-IC, LA9241ML | C26 | 87-A11-112-080 | | CAP, 0.001-50V |
| | 87-A20-459-010 | | C-IC, LC78622ED | C27 | 87-A11-067-080 | | C-CAP, S 1-10 K B |
| | 87-A21-093-010 | | IC, LA6541D | C28 | 87-016-669-080 | | C-CAP, S 0.1-25 K B |
| | 8Z-CH4-636-010 | | IC, LC867132V-5K36 | C29 | 87-016-669-080 | | C-CAP, S 0.1-25 K B |
| | 87-A21-245-010 | | IC, RPM6938-V4 | C30 | 87-010-220-080 | | C-CAP, S 0.018-50 B |
| | 87-A21-145-040 | | C-IC, BA4560F-E2 | C31 | 87-010-220-080 | | C-CAP, S 0.018-50 B |
| TRANSISTOR | | | | C33 | 87-010-401-080 | | CAP, ELECT 1-50V |
| | 89-319-233-080 | | TR, 2SC1923 (0.1W) | C34 | 87-010-401-080 | | CAP, ELECT 1-50V |
| | 87-A30-092-080 | | FET, 2SK439E/F<EZ> | C35 | 87-015-819-080 | | CAPACITOR, 0.01 |
| | 87-026-447-080 | | TR, 2SC1740S R<EZ> | C36 | 87-010-112-080 | | CAP, ELECT 100-16V |
| | 89-320-011-080 | | TR, 2SC2001 (15W) | C37 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| | 87-026-214-080 | | TR, DTA114YS (0.3W) | C38 | 87-010-380-080 | | CAP, ELECT 47-16V |
| | 87-026-215-010 | | TR, DTC114YS | C39 | 87-010-404-080 | | CAP, ELECT 4.7-50V |
| | 87-026-463-010 | | TR, 2SA933S, RS | C40 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| | 87-026-291-010 | | TR, DTC124XS | C41 | 87-012-349-080 | | C-CAP, S 1000P-50 CH |
| | 89-213-702-010 | | TR, 2SB1370 (1.8W) | C42 | 87-012-349-080 | | C-CAP, S 1000P-50 CH |
| | 87-026-462-010 | | TR, 2SC1740S | C43 | 87-012-349-080 | | C-CAP, S 1000P-50 CH |
| | 88-NF9-637-010 | | TR, 2SA1318T/U | C44 | 87-010-311-080 | | CAP 12P |
| | 89-318-154-080 | | TR, 2SC1815 Y | C45 | 87-010-312-080 | | C-CAP, S 15P-50 CH |
| | 89-113-184-080 | | TR, 2SA1318T | C46 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| | 89-112-965-080 | | TR, 2SA1296 (0.75W) | C47 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| | 87-026-464-010 | | TR, DTC114TS | C48 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| | 87-026-239-010 | | C-TR, DTC114TK | C49 | 87-012-156-080 | | C-CAP, S 220P-50 J CH |
| | 89-110-150-010 | | TR, 2SA1015 | C50 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| | 89-318-155-010 | | TR, 2SC1815 (GR) | C51 | 87-010-316-080 | | C-CAP, S 33P-50 CH<EZ> |
| | 87-026-496-080 | | FET, 2SJ103GR | C52 | 87-010-197-080 | | CAP, CHIP 0.01 DM<EZ> |
| DIODE | | | | C53 | 87-010-197-080 | | CAP, CHIP 0.01 DM<EZ> |
| | 87-070-345-080 | | DIODE, IN4148 | C54 | 87-A11-110-080 | | CAP, 820P-50<EZ> |
| | 87-A40-616-070 | | VARI CAP DIODE SVC384 | C55 | 87-010-197-080 | | CAP, CHIP 0.01 DM<EZ> |
| | 87-A40-615-070 | | FM VARI-CAP DIODE 3KV1311NT | C71 | 87-015-819-080 | | CAPACITOR, 0.01 |
| | 87-A40-574-080 | | ZENER, MTZJ3.0A | C73 | 87-016-669-080 | | C-CAP, S 0.1-25 K B |
| | 87-A40-466-080 | | ZENER, MTZJ2.7A | C78 | 87-A11-148-080 | | CHIP CAPACITOR, 0.1-50<EZ> |
| | 87-A40-648-080 | | ZENER, MTZJ8.2A | C207 | 87-010-374-080 | | CAP, ELECT 47-10V |
| | 87-A40-234-080 | | ZENER, MTZJ5.6A | C208 | 87-010-402-080 | | CAP, ELECT 2.2-50V |
| | 87-017-139-010 | | ZENER, HZS15-2 | C209 | 87-010-190-080 | | S CHIP F 0.01 |
| | 87-A40-441-080 | | ZENER, MTZJ7.5B | C210 | 87-010-190-080 | | S CHIP F 0.01 |
| | 87-020-465-080 | | DIODE, 1SS133 (110MA) | C211 | 87-010-401-080 | | CAP, ELECT 1-50V |
| | 87-A40-465-010 | | DIODE, FR202 | C212 | 87-010-401-080 | | CAP, ELECT 1-50V |
| MAIN C.B | | | | C215 | 87-010-425-080 | | C-CAP, 0.22-25 F |
| C1 | 87-010-314-080 | | C-CAP, S 22P-50V | C216 | 87-010-425-080 | | C-CAP, 0.22-25 F |
| C2 | 87-010-316-080 | | C-CAP, S 33P-50 J CH | C217 | 87-010-400-080 | | CAP, ELECT 0.47-50V |
| C3 | 87-010-314-080 | | C-CAP, S 22P-50V | C218 | 87-010-400-080 | | CAP, ELECT 0.47-50V |
| C5 | 87-016-669-080 | | C-CAP, S 0.1-25 KB<EXCEPT EZ> | C220 | 87-010-405-080 | | CAP, ELECT 10-50V |
| C5 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF<EZ> | C222 | 87-010-190-080 | | S CHIP F 0.01 |
| C6 | 87-010-312-080 | | C-CAP, S 15P-50 CH<EZ> | C223 | 87-010-190-080 | | S CHIP F 0.01 |
| C6 | 87-010-313-080 | | CAP, CHIP 18P<EXCEPT EZ> | C226 | 87-010-190-080 | | S CHIP F 0.01 |
| C7 | 87-012-158-080 | | C-CAP, S 390P-50 CH | C228 | 87-010-401-080 | | CAP, ELECT 1-50V |
| C8 | 87-012-349-080 | | C-CAP, S 1000P-50 CH | C229 | 87-010-401-080 | | CAP, ELECT 1-50V |
| C10 | 87-010-197-080 | | CAP, CHIP 0.01 DM | C231 | 87-010-213-080 | | C-CAP, S 0.015-50 B |
| C11 | 87-010-197-080 | | CAP, CHIP 0.01 DM | C232 | 87-010-213-080 | | C-CAP, S 0.015-50 B |
| C12 | 87-010-197-080 | | CAP, CHIP 0.01 DM | C233 | 87-010-546-080 | | CAP, ELECT 0.33-50V |
| C13 | 87-010-150-080 | | C-CAP, S 6P-50 CH | C234 | 87-010-546-080 | | CAP, ELECT 0.33-50V |
| C14 | 87-012-157-080 | | C-CAP 330P-50CH | C235 | 87-010-544-080 | | CAP, ELECT 0.1-50V |
| C15 | 87-012-349-080 | | C-CAP, S 1000P-50 CH | C236 | 87-010-544-080 | | CAP, ELECT 0.1-50V |
| C16 | 87-010-380-080 | | CAP, ELECT 47-16V | C237 | 87-010-260-080 | | CAP, ELECT 47-25V |
| C17 | 87-010-198-080 | | CAP, CHIP 0.022-50V | C238 | 87-010-263-080 | | CAP, ELECT 100-10V |
| | | | | C241 | 87-010-405-080 | | CAP, ELECT 10-50V |
| | | | | C242 | 87-010-405-080 | | CAP, ELECT 10-50V |
| | | | | C243 | 87-010-405-080 | | CAP, ELECT 10-50V |
| | | | | C244 | 87-010-405-080 | | CAP, ELECT 10-50V |
| | | | | C245 | 87-010-405-080 | | CAP, ELECT 10-50V |
| | | | | C246 | 87-010-405-080 | | CAP, ELECT 10-50V |
| | | | | C247 | 87-010-404-080 | | CAP, ELECT 4.7-50V |

| REF. NO. | PART NO. | KANRI NO. | DESCRIPTION | REF. NO. | PART NO. | KANRI NO. | DESCRIPTION |
|----------|----------------|-----------|---------------------------------|-----------|----------------|-----------|------------------------------------|
| C248 | 87-010-404-080 | | CAP, ELECT 4.7-50V | C843 | 87-018-134-080 | | CAP, TC U 0.01-16 |
| C251 | 87-010-401-080 | | CAP, ELECT 1-50V | C844 | 87-018-124-080 | | CAP 270P-100 |
| C261 | 87-010-402-080 | | CAP, ELECT 2.2-50V | C846 | 87-010-194-080 | | CAP, CHIP 0.047 |
| C262 | 87-010-402-080 | | CAP, ELECT 2.2-50V | C849 | 87-010-177-080 | | CHIP CAPACITOR 820P<EXCEPT 99> |
| C263 | 87-010-178-080 | | CHIP CAP 1000P-50 KB | C849 | 87-010-178-080 | | CHIP CAP, 1000P-50 KB<99> |
| C264 | 87-010-178-080 | | CHIP CAP 1000P-50 KB | C850 | 87-010-177-080 | | CHIP CAPACITOR 820P<EXCEPT 99> |
| C265 | 87-010-383-080 | | CAP, ELECT 33-25V | C850 | 87-010-178-080 | | CHIP CAP, 1000P-50 KB<99> |
| C266 | 87-010-383-080 | | CAP, ELECT 33-25V | C851 | 87-010-186-080 | | C-CAP, S 4700P-50 KB |
| C267 | 87-010-380-080 | | CAP, ELECT 47-16V | C852 | 87-018-131-080 | | CAP, 0.001-50V |
| C268 | 87-010-380-080 | | CAP, ELECT 47-16V | C853 | 87-010-190-080 | | S CHIP F 0.01 |
| C271 | 87-010-236-080 | | CAP, ELECT 1000-10V | C910 | 87-010-197-080 | | CAP, CHIP 0.01 DM<EXCEPT EZ> |
| C272 | 87-010-236-080 | | CAP, ELECT 1000-10V | C927 | 87-010-316-080 | | C-CAP, S 33P-50 J CH |
| C277 | 87-010-260-080 | | CAP, ELECT 47-25V | C928 | 87-010-316-080 | | C-CAP, S 33P-50 J CH |
| C278 | 87-010-263-080 | | CAP, ELECT 100-10V | C929 | 87-A11-076-080 | | C-CAP, S 33P-50 |
| C279 | 87-010-112-080 | | CAP, ELECT 100-16V | C930 | 87-010-316-080 | | C-CAP, S 33P-50 J CH |
| C280 | 87-010-956-080 | | C-CAP, S 0.068-50 | C942 | 87-010-197-080 | | CAP, CHIP 0.01 DM<EZ> |
| C281 | 87-010-956-080 | | C-CAP, S 0.068-50 | CF2 | 82-785-747-080 | | CF, MS2 GHY, R |
| C299 | 87-010-197-080 | | CAP, CHIP 0.01 DM | CF3 | 82-785-747-080 | | CF, MS2 GHY, R |
| C301 | 87-010-453-010 | | CAP, ELECT 4700-25V | CF4 | 87-A91-094-010 | | FLTR, CDA10.7 MG80A |
| C306 | 87-010-404-080 | | CAP, ELECT 4.7-50V | CN1 | 87-099-194-010 | | CONN, 6P 6216V |
| C307 | 87-010-401-080 | | CAP, ELECT 1-50V | CN201 | 87-A60-054-010 | | CONN, 14P 6216V |
| C308 | 87-010-221-080 | | CAP, ELECT 470-10V | CN204 | 87-049-469-010 | | CONN, 4P V |
| C309 | 87-010-263-080 | | CAP, ELECT 100-10V | CN205 | 87-A90-178-010 | | CONN, 2P V S2M-2W |
| C310 | 87-010-248-080 | | CAP, ELECT 220-10V | CN801 | 87-049-469-010 | | CONN, 4P V |
| C311 | 87-010-384-080 | | CAP, ELECT 100-25V | CN802 | 87-049-469-010 | | CONN, 4P V<EXCEPT 99> |
| C312 | 87-010-385-080 | | CAP, ELECT 220-25V | CN803 | S1-2S3-002-500 | | CONN, 3P |
| C314 | 87-010-248-080 | | CAP, ELECT 220-10V | CON802 | 8Z-CH4-612-010 | | CONN ASSY, 6P<99> |
| C315 | 87-010-197-080 | | CAP, CHIP 0.01 DM | CON803 | 8Z-CH4-616-010 | | CONN ASSY, 3P |
| C321 | 87-010-197-080 | | CAP, CHIP 0.01 DM | L2 | 87-A50-347-010 | | COIL, FM BPF EX |
| C322 | 87-010-263-080 | | CAP, ELECT 100-10V | L3 | 87-A91-095-010 | | BAR-ANT, MW FOR 2B(SYN)<EXCEPT EZ> |
| C325 | 87-010-405-080 | | CAP, ELECT 10-50V | L3 | 87-A91-096-010 | | BAR-ANT, MW/LW FOR 3B(SYN)<EZ> |
| C341 | 87-010-197-080 | | CAP, CHIP 0.01 DM | L4 | 87-A50-420-010 | | COIL, MW OSC(SYN) |
| C342 | 87-010-221-080 | | CAP, ELECT 470-10V | L5 | 87-A50-424-010 | | COIL, FM RF EX(SYN) |
| C343 | 87-010-401-080 | | CAP, ELECT 1-50V | L6 | 87-A50-427-010 | | COIL, FM OSC EX(SYN) |
| C801 | 87-010-402-080 | | CAP, ELECT 2.2-50V | L7 | 87-A91-308-010 | | FLTR, PCFAZH- 450T (TOK) |
| C802 | 87-010-402-080 | | CAP, ELECT 2.2-50V | L8 | 87-005-849-080 | | COIL, 10UH(CECS) |
| C803 | 87-010-181-080 | | C-CAP, S 1800P-50 KB<EXCEPT 99> | L9 | 87-005-849-080 | | COIL, 10UH(CECS) |
| C803 | 87-010-182-080 | | C-CAP, S 2200P-50 KB<99> | L51 | 87-A50-421-010 | | COIL, LW OSC(SYN)<EZ> |
| C804 | 87-010-181-080 | | C-CAP, S 1800P-50 KB<EXCEPT 99> | L801 | 87-007-342-010 | | COIL, OSC 85K BIAS |
| C804 | 87-010-182-080 | | C-CAP, S 2200P-50 KB<99> | R840 | 87-029-124-010 | | RES, FUSE 2.2-1/4 |
| C805 | 87-012-158-080 | | C-CAP, S 390P-50 CH | S2 | 87-036-389-010 | | SW, PUSH 1-1-1 R8120125 |
| C806 | 87-012-158-080 | | C-CAP, S 390P-50 CH | S3 | 87-A91-151-010 | | SW, LEAF 1P2T/TC 48-021 |
| C809 | 87-010-379-010 | | CAP, E 22-10 SM | TC1 | 87-011-220-080 | | TRIMMER CAP 20P VTC |
| C810 | 87-010-379-010 | | CAP, E 22-10 SM | TC51 | 87-011-233-080 | | TRIMER, 50P VCT54<EZ> |
| C811 | 87-010-404-080 | | CAP, ELECT 4.7-50V | X1 | 87-A70-061-010 | | VIB, XTAL 4.500MHZ CSA-309 |
| C812 | 87-010-404-080 | | CAP, ELECT 4.7-50V | FRONT C.B | | | |
| C815 | 87-010-374-010 | | CAP, ELECT 47-10V | C601 | 87-010-313-080 | | CAP, CHIP 18P |
| C816 | 87-010-384-080 | | CAP, ELECT 100-25V | C602 | 87-010-315-080 | | C-CAP, S 27P-50 CH |
| C819 | 87-010-401-010 | | CAP, ELECT 1-50V | C603 | 87-010-319-080 | | C-CAP, S 56P-50 J CH |
| C820 | 87-010-401-010 | | CAP, ELECT 1-50V | C604 | 87-010-312-080 | | C-CAP, S 15P-50 J CH |
| C821 | 87-010-183-080 | | C-CAP, S 2700P-50 KB<EXCEPT 99> | C605 | 87-010-317-080 | | C-CAP, S 39P-50 CH |
| C821 | 87-012-153-080 | | C-CAP, S 120P-50 CH<99> | C606 | 87-A11-067-080 | | C-CAP, S 1-10 |
| C822 | 87-010-183-080 | | C-CAP, S 2700P-50 KB<EXCEPT 99> | C607 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| C822 | 87-012-153-080 | | C-CAP, S 120P-50 CH<99> | C608 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF |
| C823 | 87-010-213-080 | | C-CAP, S 0.015-50 B | C609 | 87-A11-067-080 | | C-CAP, S 1-10 |
| C824 | 87-010-213-080 | | C-CAP, S 0.015-50 B | C610 | 87-010-112-080 | | CAP, ELECT 100-16V |
| C825 | 87-010-405-080 | | CAP, ELECT 10-50V | C611 | 87-A11-148-080 | | CHIP CAPACITOR, 0.1-50 |
| C826 | 87-010-405-080 | | CAP, ELECT 10-50V | C612 | 87-010-248-080 | | CAP, ELECT 220-6.3V |
| C827 | 87-010-404-080 | | CAP, ELECT 4.7-50V | C613 | 87-010-402-080 | | CAP, ELECT 2.2-50V |
| C828 | 87-010-404-080 | | CAP, ELECT 4.7-50V | C614 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF |
| C830 | 87-010-260-080 | | CAP, ELECT 47-25V | C615 | 87-010-400-080 | | CAP, ELECT 0.47-50V |
| C831 | 87-010-198-080 | | CAP, CHIP 0.022 | C616 | 87-010-401-080 | | CAP, ELECT 1-50V |
| C832 | 87-010-198-080 | | CAP, CHIP 0.022 | C617 | 87-010-178-080 | | CHIP CAP 1000P |
| C833 | 87-010-179-080 | | CAP, CHIP S B1200P | C618 | 87-010-391-080 | | CAP, ELECT 10-25V |
| C834 | 87-010-248-080 | | CAP, ELECT 220-10V | C620 | 87-010-190-080 | | C-CAP, S 0.01-50 |
| C835 | 87-012-358-010 | | C-CAP, S 0.47-16V | C625 | 87-010-805-080 | | C-CAP, S 1-16 |
| C837 | 87-010-374-010 | | CAP, ELECT 47-10V | C626 | 87-010-404-080 | | CAP, ELECT 4.7-50V |
| C838 | 87-010-405-080 | | CAP, ELECT 10-50V | C691 | 87-010-405-080 | | CAP, ELECT 10-50V |
| C841 | 87-010-182-080 | | C-CAP, S 2200P-50 KB | | | | |
| C842 | 87-010-182-080 | | C-CAP, S 2200P-50 KB | | | | |

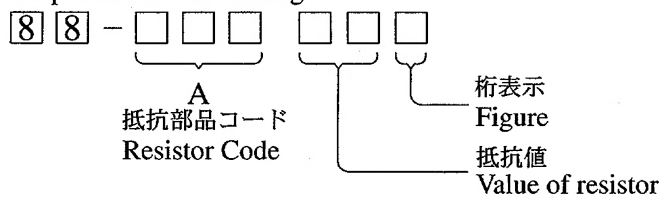
| REF.NO. | PART NO. | KANRI NO. | DESCRIPTION | REF.NO. | PART NO. | KANRI NO. | DESCRIPTION |
|-------------|----------------|-----------|-----------------------|-------------|----------------|-----------|------------------------------|
| CN601 | 87-099-031-010 | | CONN,14P 6216 H | C475 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| CN602 | 87-099-200-010 | | CONN, 7P 6216H | C476 | 87-010-236-080 | | CAP, E 1000-10 SME |
| CN603 | 87-099-199-010 | | CONN, 6P 6216 H | C477 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| CN604 | 87-099-200-010 | | CONN, 7P 6216H | C478 | 87-010-263-080 | | CAP, ELECT 100-10V |
| CN605 | 87-099-200-010 | | CONN, 7P 6216H | C479 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| FC601 | 8Z-CH4-619-010 | | FF-CABLE,14P AF-FR | C480 | 87-010-221-080 | | CAP, ELECT 470-10V |
| FC602 | 8Z-CH4-621-010 | | FF-CABLE, 7P CD-FR | C481 | 87-010-405-080 | | CAP, ELECT 10-50V |
| FC603 | 8Z-CH4-622-010 | | FF-CABLE, 6P TU-FR | C482 | 87-010-405-080 | | CAP, ELECT 10-50V |
| FC604 | 8Z-CH4-620-010 | | FF-CABLE, 7P FR-LED | C483 | 87-012-156-080 | | C-CAP, S 220P-50 CH |
| FC605 | 8Z-CH4-621-010 | | FF-CABLE, 7P FR-LED | C484 | 87-012-156-080 | | C-CAP, S 220P-50 CH |
| L601 | 87-003-171-010 | | COIL, 10UH TROIDAL | C489 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF |
| LCD601 | 8Z-CH4-635-010 | | LCD, HLC7365 ZCH-4 | C490 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF |
| S601 | 87-A90-164-080 | | SW, TACT SKQNA(N) | C491 | 87-010-197-080 | | CAP, CHIP 0.01 DM |
| S604 | 87-A90-164-080 | | SW, TACT SKQNA(N) | C492 | 87-010-221-080 | | CAP, ELECT 470-10V |
| S605 | 87-A90-164-080 | | SW, TACT SKQNA(N) | C493 | 87-010-190-080 | | C-CAP, S 0.01-50 |
| S606 | 87-A90-164-080 | | SW, TACT SKQNA(N) | C501 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF |
| S607 | 87-A90-164-080 | | SW, TACT SKQNA(N) | C502 | 87-010-322-080 | | C-CAP, S 100P-50 J CH |
| S614 | 87-A90-164-080 | | SW, TACT SKQNA(N) | C503 | 87-010-322-080 | | C-CAP, S 100P-50 J CH |
| S615 | 87-A90-164-080 | | SW, TACT SKQNA(N) | C504 | 87-010-322-080 | | C-CAP, S 100P-50 J CH |
| X601 | 87-030-415-010 | | XTAL 32.768KHZ | C505 | 87-010-322-080 | | C-CAP, S 100P-50 J CH |
| X602 | 87-A70-070-080 | | VIB, CER 5.76MHZ CRHF | C506 | 87-010-322-080 | | C-CAP, S 100P-50 J CH |
| CD MAIN C.B | | | | C510 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF |
| C401 | 87-010-403-080 | | CAP, ELECT 3.3-50V | CN401 | 87-A60-424-010 | | CONN, 16P V TOC-B |
| C402 | 87-010-197-080 | | CAP, CHIP 0.01 DM | CN402 | 8Z-CH4-614-010 | | CONN ASSY, 6P CD-ME |
| C403 | 87-010-263-080 | | CAP, ELECT 100-10V | CN403 | 87-099-195-010 | | CONN, 7P 6216 V |
| C404 | 87-010-248-080 | | CAP, ELECT 220-10V | FC401 | 8Z-CH4-618-010 | | FF-CABLE, 16P CD-RF |
| C405 | 87-010-197-080 | | CAP, CHIP 0.01 DM | L401 | 87-003-102-080 | | COIL, 10UH |
| C406 | 87-010-374-080 | | CAP, ELECT 47-10V | L404 | 87-003-152-080 | | COIL, 100UH CECS |
| C407 | 87-010-178-080 | | C-CAP, S 1000P-50 KB | SFR430 | 87-024-176-080 | | SFR, 100K H NVZ6TLTA |
| C409 | 87-010-248-080 | | CAP, ELECT 220-10V | X401 | 87-A70-046-010 | | VIB, XTAL 16.934MHZ |
| C410 | 87-010-263-080 | | CAP, ELECT 100-10V | LED C.B | | | |
| C412 | 87-010-403-080 | | CAP, ELECT 3.3-50V | CN608 | 87-099-200-010 | | CONN, 7P 6216H |
| C413 | 87-A11-138-080 | | CAP, 0.033-50 | CN609 | 87-099-200-010 | | CONN, 7P 6216H |
| C414 | 87-010-405-080 | | CAP, ELECT 10-50V | LED601 | 88-CD6-630-010 | | LED, 934ID RED |
| C416 | 87-010-545-080 | | CAP, ELECT 0.22-50V | LED602 | 88-CD6-630-010 | | LED, 934ID RED |
| C417 | 87-012-157-080 | | C-CAP, S 330P-50 CH | LED603 | 88-CD6-630-010 | | LED, 934ID RED |
| C425 | 87-010-176-080 | | C-CAP, S 680P-50 SL | LED604 | 88-CD6-630-010 | | LED, 934ID RED |
| C429 | 87-010-186-080 | | CAP, CHIP 4700P | LED606 | 88-CD6-630-010 | | LED, 934ID RED |
| C430 | 87-012-156-080 | | C-CAP, S 220P-50 CH | LED607 | 88-CD6-630-010 | | LED, 934ID RED |
| C431 | 87-010-545-080 | | CAP, ELECT 0.22-50V | LED608 | 88-CD6-630-010 | | LED, 934ID RED |
| C432 | 87-010-374-080 | | CAP, ELECT 47-10V | LED610 | 88-CD6-631-010 | | LED, 934GD GRN |
| C433 | 87-010-401-080 | | CAP, ELECT 1-50V | KEY C.B | | | |
| C434 | 87-010-184-080 | | C-CAP, S 3300P-50 KB | CN607 | 87-A60-109-010 | | CONN, 2PIN |
| C435 | 87-010-197-080 | | CAP, CHIP 0.01 DM | S608 | 87-A90-164-080 | | SW, TACT SKQNA(N) |
| C436 | 87-010-374-080 | | CAP, ELECT 47-10V | S609 | 87-A90-164-080 | | SW, TACT SKQNA(N) |
| C437 | 87-010-404-080 | | CAP, ELECT 4.7-50V | S610 | 87-A90-164-080 | | SW, TACT SKQNA(N) |
| C438 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF | S611 | 87-A90-164-080 | | SW, TACT SKQNA(N) |
| C442 | 87-010-314-080 | | C-CAP, S 22P-50V | S612 | 87-A90-164-080 | | SW, TACT SKQNA(N) |
| C445 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF | S613 | 87-A90-164-080 | | SW, TACT SKQNA(N) |
| C446 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF | HP C.B | | | |
| C447 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF | J251 | 87-A60-569-010 | | JACK, HTJ-035-18 |
| C448 | 87-010-315-080 | | C-CAP, S 27P-50 CH | PWR C.B | | | |
| C450 | 87-012-140-080 | | CAP 470P | C901 | 87-A10-577-080 | | CAP, CER 0.022-25 |
| C451 | 87-012-156-080 | | C-CAP, S 220P-50 CH | C902 | 87-A10-577-080 | | CAP, CER 0.022-25 |
| C455 | 87-010-263-080 | | CAP, ELECT 100-10V | C903 | 87-A10-577-080 | | CAP, CER 0.022-25 |
| C457 | 87-010-312-080 | | C-CAP, S 15P-50 J CH | C904 | 87-A10-577-080 | | CAP, CER 0.022-25 |
| C458 | 87-010-312-080 | | C-CAP, S 15P-50 J CH | F901 | 87-035-347-010 | | FUSE, 2.5A 250V T<EXCEPT EZ> |
| C459 | 87-010-263-080 | | CAP, ELECT 100-10V | FC901 | 87-A90-505-080 | | FUSE HOLDER<EXCEPT EZ> |
| C460 | 87-010-197-080 | | C-CAP, S 0.01-50 | FC902 | 87-A90-505-080 | | FUSE HOLDER<EXCEPT EZ> |
| C461 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF | PR901 | 87-A90-092-080 | | PROTECTOR 2.5A 491 60V<EZ> |
| C462 | 87-010-248-080 | | CAP, E 220-10V | MOTOR-1 C.B | | | |
| C465 | 87-010-404-080 | | CAP, ELECT 4.7-50V | | | | |
| C466 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF | | | | |
| C467 | 87-010-263-080 | | CAP, ELECT 100-10V | | | | |
| C468 | 87-012-368-080 | | C-CAP, S 0.1-50 ZF | | | | |
| C469 | 87-018-121-080 | | CAP, 150P-50V | | | | |
| C470 | 87-010-544-080 | | CAP, ELECT 0.1-50V | | | | |

| REF. NO. | PART NO. | KANRI NO. | DESCRIPTION |
|----------|----------------|--------------|----------------|
| M2 | 9X-262-576-910 | | MOTOR GEAR ASS |
| PIN3 | 91-564-722-110 | | CONNECTOR 6P |
| SW1 | 91-572-085-120 | | LEAF SW |

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

Chip Resistor Part Coding



チップ抵抗
Chip resistor

| 容量 Wattage | 種類 Type | 許容誤差 Tolerance | 記号 Symbol | 寸法/Dimensions (mm) | | | | 抵抗コード : A Resistor Code : A |
|---------------|------------|-------------------|--------------|--------------------|-----|------|------|--------------------------------|
| | | | | 外形/Form | L | W | t | |
| 1/16W | 1005 | ± 5% | CJ | | 1.0 | 0.5 | 0.35 | 104 |
| 1/16W | 1608 | ± 5% | CJ | | 1.6 | 0.8 | 0.45 | 108 |
| 1/10W | 2125 | ± 5% | CJ | | 2 | 1.25 | 0.45 | 118 |
| 1/8W | 3216 | ± 5% | CJ | | 3.2 | 1.6 | 0.55 | 128 |

TRANSISTOR ILLUSTRATION



E C B

2SA933
2SC1740
DTA114YS
DTC114TS
DTC114YS
DTC124XS



E C B

2SA1015
2SA1296
2SA1318
2SC1815
2SC1923
2SC2001



B C E

2SB1370



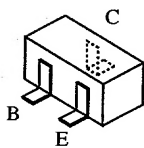
S G D

2SJ103

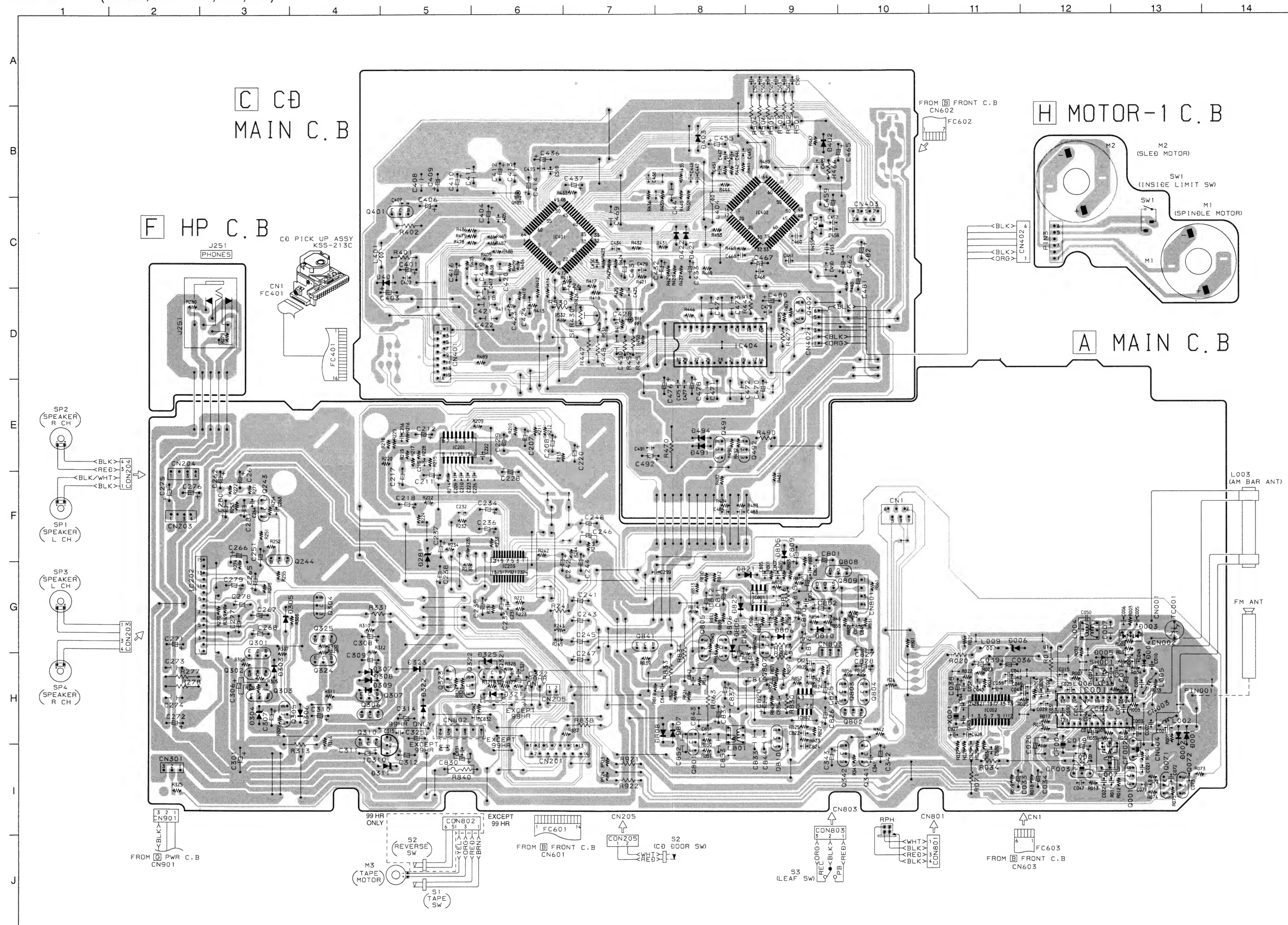


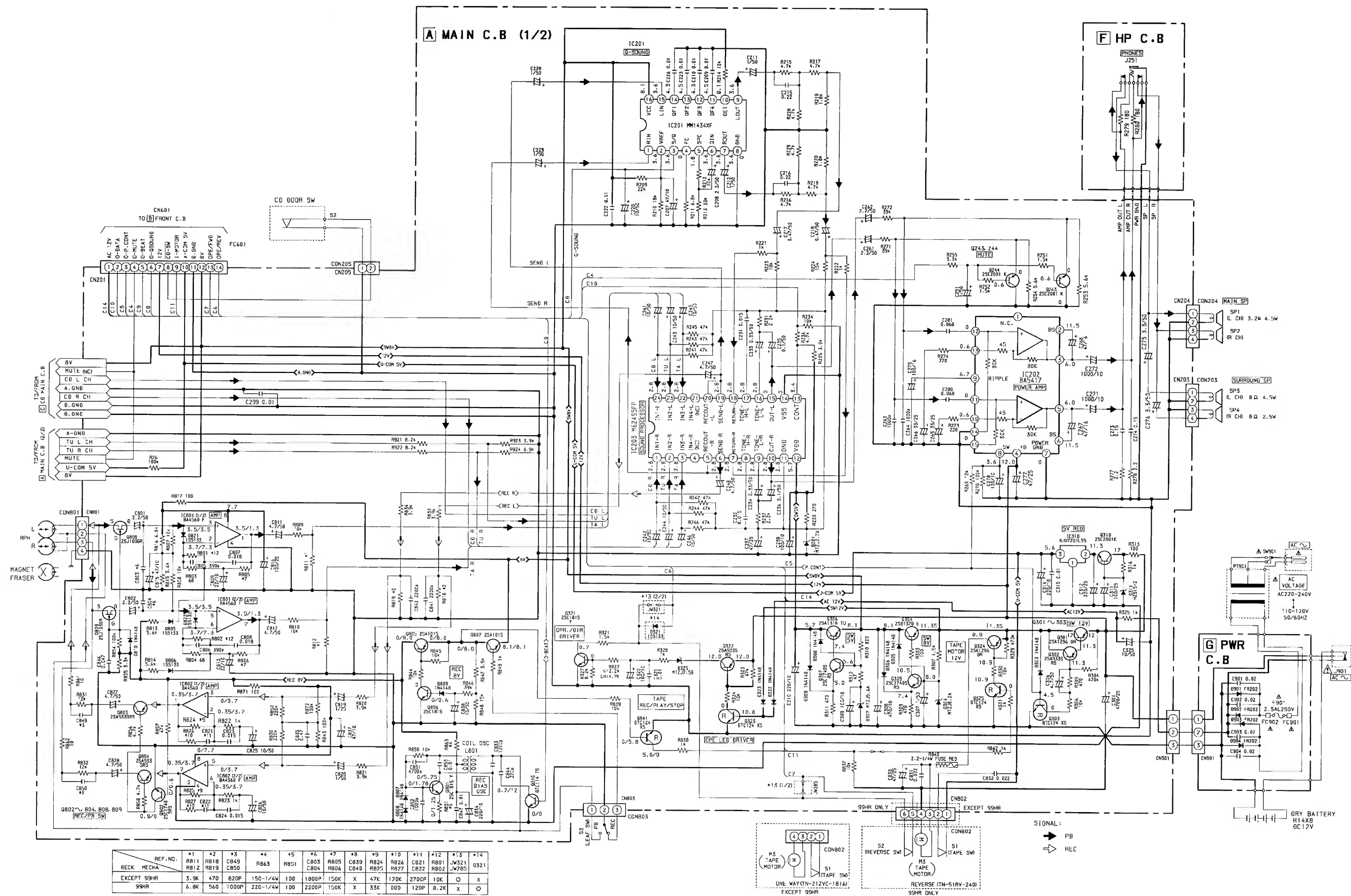
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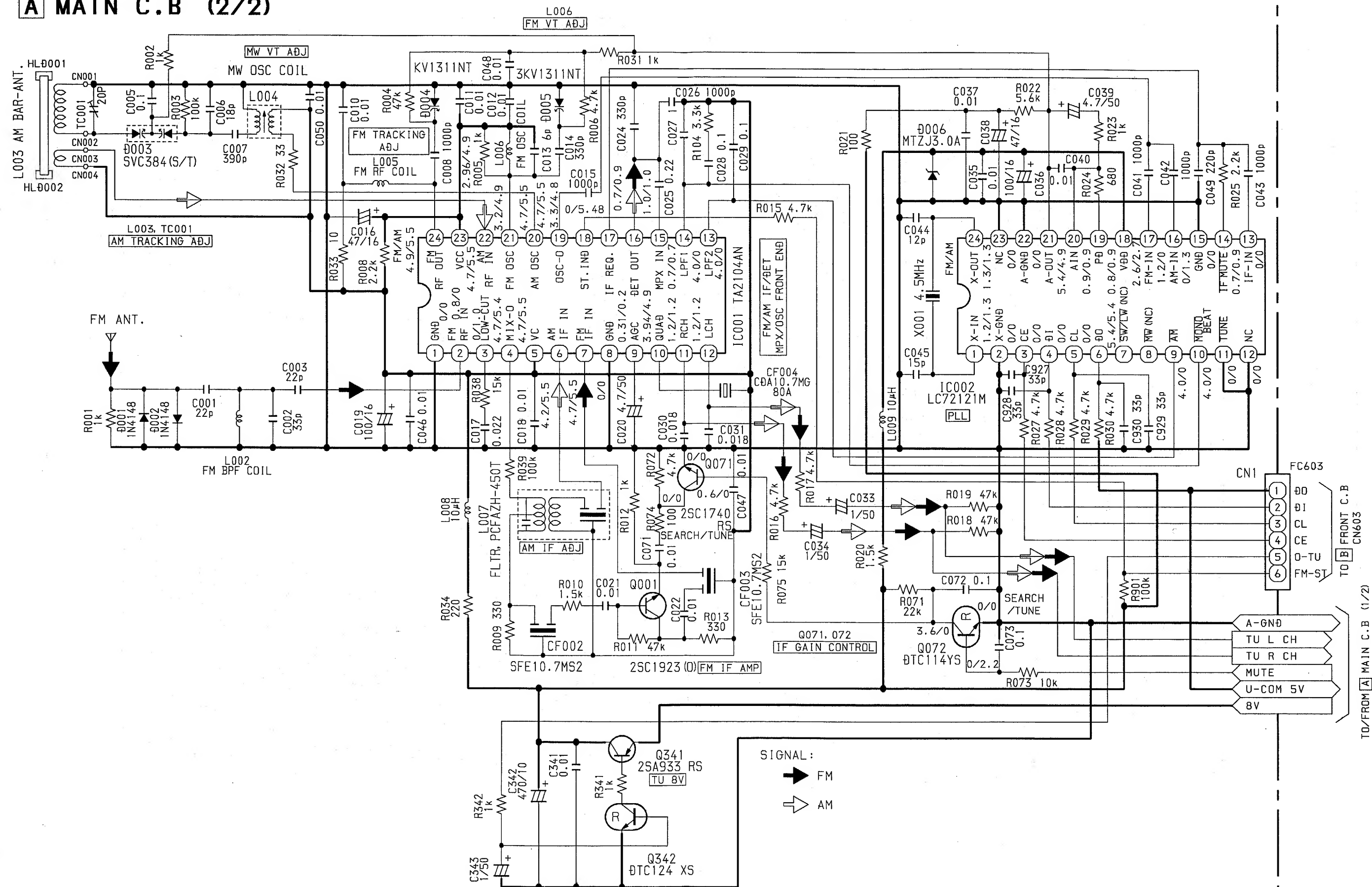


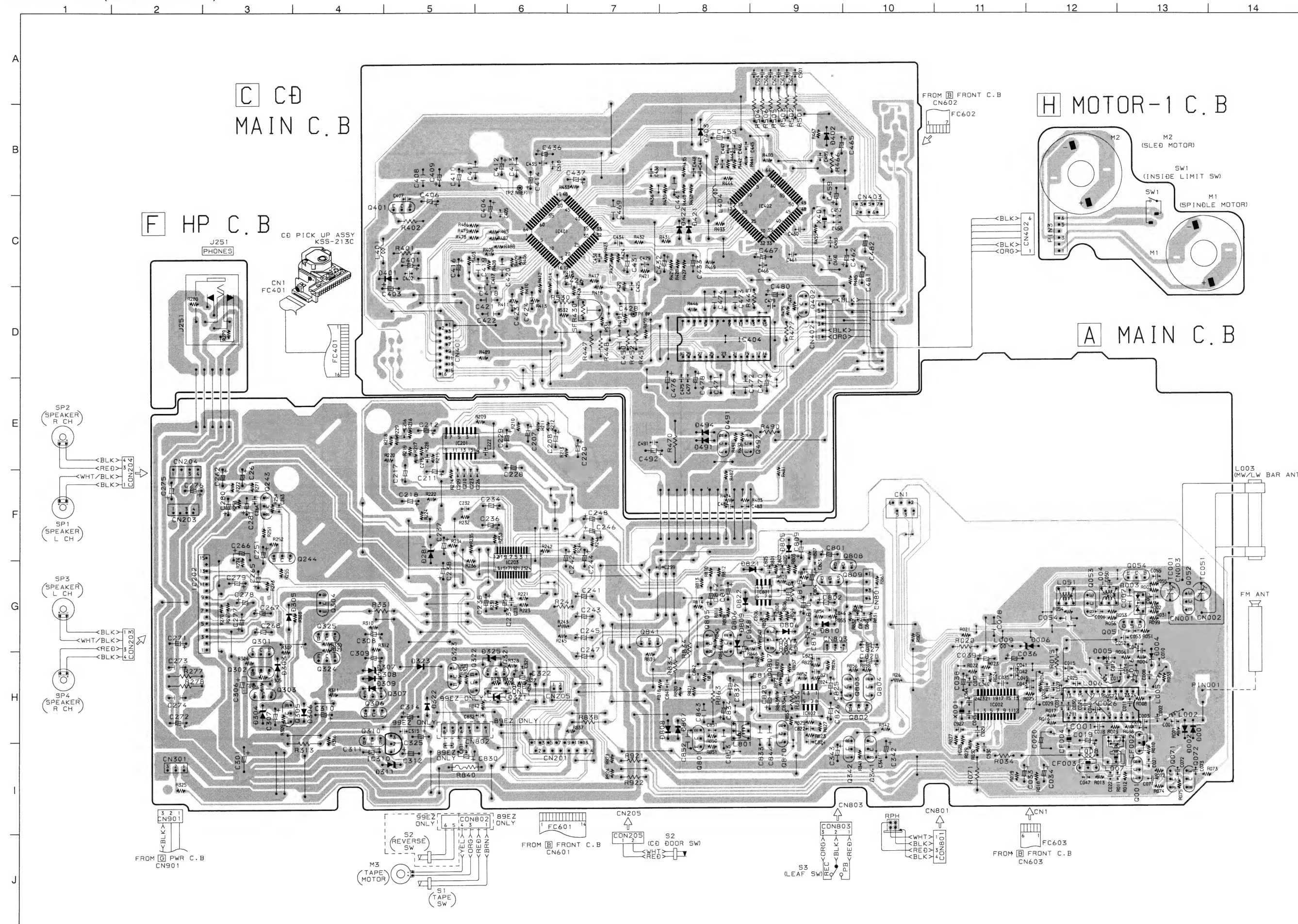
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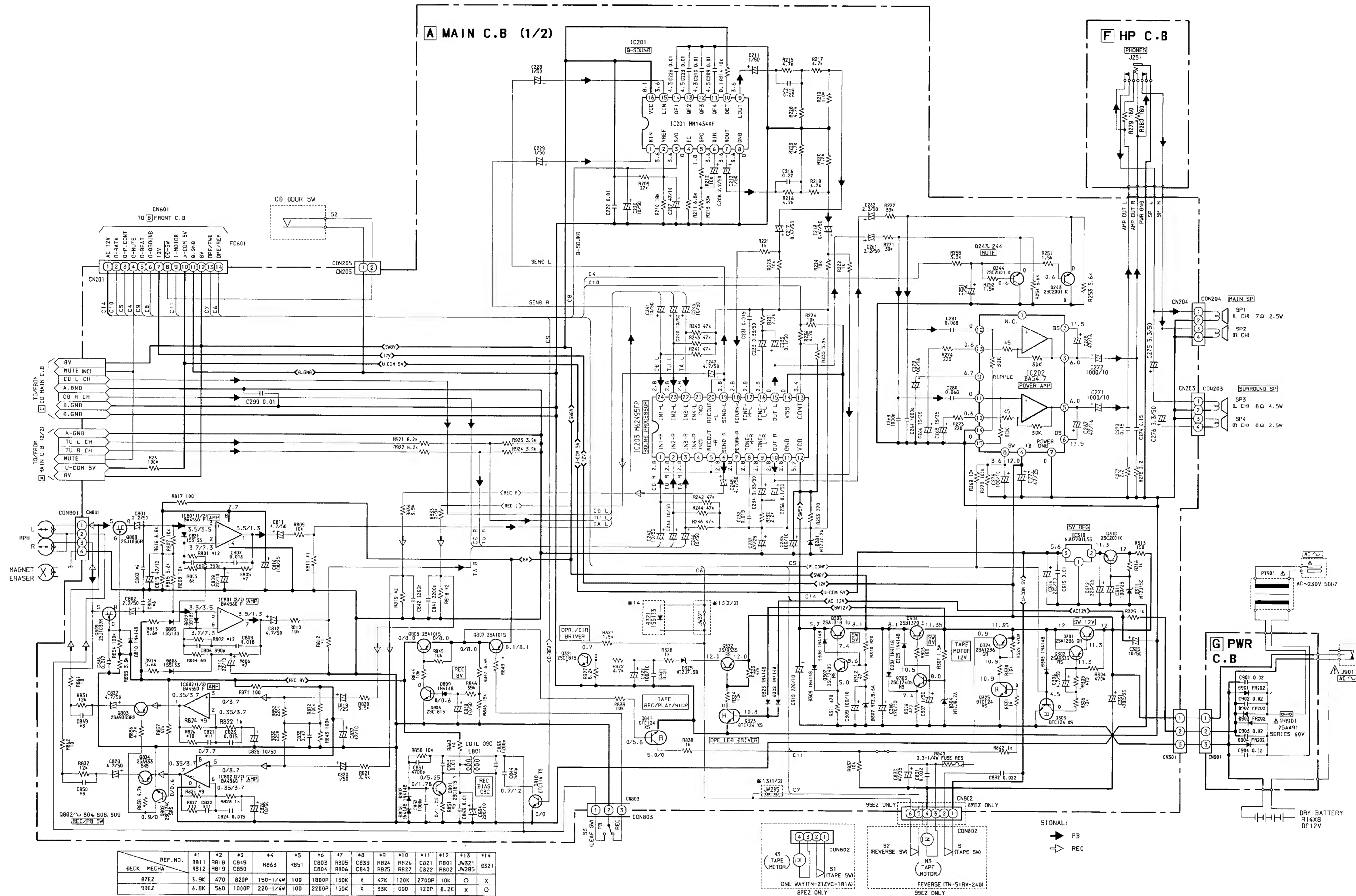






A MAIN C.B (2/2)





A MAIN C.B (2/2)

COMPONENTS:

- Resistors:** R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, R023, R024, R025, R026, R027, R028, R029, R030, R031, R032, R033, R034, R035, R036, R037, R038, R039, R040, R041, R042, R043, R044, R045, R046, R047, R048, R049, R050, R051, R052, R053, R054, R055, R056, R057, R058, R059, R060, R061, R062, R063, R064, R065, R066, R067, R068, R069, R070, R071, R072, R073, R074, R075, R076, R077, R078, R079, R080, R081, R082, R083, R084, R085, R086, R087, R088, R089, R090, R091, R092, R093, R094, R095, R096, R097, R098, R099.
- Capacitors:** C001, C002, C003, C004, C005, C006, C007, C008, C009, C010, C011, C012, C013, C014, C015, C016, C017, C018, C019, C020, C021, C022, C023, C024, C025, C026, C027, C028, C029, C030, C031, C032, C033, C034, C035, C036, C037, C038, C039, C040, C041, C042, C043, C044, C045, C046, C047, C048, C049, C050, C051, C052, C053, C054, C055, C056, C057, C058, C059, C060, C061, C062, C063, C064, C065, C066, C067, C068, C069, C070, C071, C072, C073, C074, C075, C076, C077, C078, C079, C080, C081, C082, C083, C084, C085, C086, C087, C088, C089, C090, C091, C092, C093, C094, C095, C096, C097, C098, C099.
- Integrated Circuits:** IC001, IC002.
- Diodes:** D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043, D044, D045, D046, D047, D048, D049, D050, D051, D052, D053, D054, D055, D056, D057, D058, D059, D060, D061, D062, D063, D064, D065, D066, D067, D068, D069, D070, D071, D072, D073, D074, D075, D076, D077, D078, D079, D080, D081, D082, D083, D084, D085, D086, D087, D088, D089, D090, D091, D092, D093, D094, D095, D096, D097, D098, D099.
- Transistors:** Q001, Q002, Q003, Q004, Q005, Q006, Q007, Q008, Q009, Q010, Q011, Q012, Q013, Q014, Q015, Q016, Q017, Q018, Q019, Q020, Q021, Q022, Q023, Q024, Q025, Q026, Q027, Q028, Q029, Q030, Q031, Q032, Q033, Q034, Q035, Q036, Q037, Q038, Q039, Q040, Q041, Q042, Q043, Q044, Q045, Q046, Q047, Q048, Q049, Q050, Q051, Q052, Q053, Q054, Q055, Q056, Q057, Q058, Q059, Q060, Q061, Q062, Q063, Q064, Q065, Q066, Q067, Q068, Q069, Q070, Q071, Q072, Q073, Q074, Q075, Q076, Q077, Q078, Q079, Q080, Q081, Q082, Q083, Q084, Q085, Q086, Q087, Q088, Q089, Q090, Q091, Q092, Q093, Q094, Q095, Q096, Q097, Q098, Q099.
- Adjusters:** L000, L001, L002, L003, L004, L005, L006.

FUNCTIONAL BLOCKS:

- FM TRACKING:** Includes components like R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, R023, R024, R025, R026, R027, R028, R029, R030, R031, R032, R033, R034, R035, R036, R037, R038, R039, R040, R041, R042, R043, R044, R045, R046, R047, R048, R049, R050, R051, R052, R053, R054, R055, R056, R057, R058, R059, R060, R061, R062, R063, R064, R065, R066, R067, R068, R069, R070, R071, R072, R073, R074, R075, R076, R077, R078, R079, R080, R081, R082, R083, R084, R085, R086, R087, R088, R089, R090, R091, R092, R093, R094, R095, R096, R097, R098, R099.
- MW/LW TRACKING:** Includes components like R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, R023, R024, R025, R026, R027, R028, R029, R030, R031, R032, R033, R034, R035, R036, R037, R038, R039, R040, R041, R042, R043, R044, R045, R046, R047, R048, R049, R050, R051, R052, R053, R054, R055, R056, R057, R058, R059, R060, R061, R062, R063, R064, R065, R066, R067, R068, R069, R070, R071, R072, R073, R074, R075, R076, R077, R078, R079, R080, R081, R082, R083, R084, R085, R086, R087, R088, R089, R090, R091, R092, R093, R094, R095, R096, R097, R098, R099.
- AMPLIFIER:** Includes components like R001, R002, R003, R004, R005, R006, R007, R008, R009, R010, R011, R012, R013, R014, R015, R016, R017, R018, R019, R020, R021, R022, R023, R024, R025, R026, R027, R028, R029, R030, R031, R032, R033, R034, R035, R036, R037, R038, R039, R040, R041, R042, R043, R044, R045, R046, R047, R048, R049, R050, R051, R052, R053, R054, R055, R056, R057, R058, R059, R060, R061, R062, R063, R064, R065, R066, R067, R068, R069, R070, R071, R072, R073, R074, R075, R076, R077, R078, R079, R080, R081, R082, R083, R084, R085, R086, R087, R088, R089, R090, R091, R092, R093, R094, R095, R096, R097, R098, R099.

Legend:

- SIGNAL:**
 - FM
 - MW/LW

[illegible]

The diagram shows the QXPANDER IC with 16 pins. The pins are labeled as follows:

- Pin 1: R_{IN}
- Pin 2: VREF
- Pin 3: S/Q
- Pin 4: FC
- Pin 5: SPC
- Pin 6: Q_{IN}
- Pin 7: Q_{ROUT}
- Pin 8: GND
- Pin 9: LOUT
- Pin 10: ØET
- Pin 11: QF4
- Pin 12: QF3
- Pin 13: QF2
- Pin 14: QF1
- Pin 15: LIN
- Pin 16: VCC

The internal circuitry includes a central QXPANDER block, several comparators, and a DAC. The R_{IN} pin is connected to a resistor network. The VREF pin is connected to a reference voltage. The S/Q pin is connected to the S/Q input of the QXPANDER block. The FC pin is connected to the FC input of the QXPANDER block. The SPC pin is connected to the SPC input of the QXPANDER block. The Q_{IN} pin is connected to the Q_{IN} input of the QXPANDER block. The Q_{ROUT} pin is connected to the Q_{ROUT} output of the QXPANDER block. The LOUT pin is connected to the LOUT output of the QXPANDER block. The ØET pin is connected to the ØET output of the QXPANDER block. The GND pin is connected to ground. The VCC pin is connected to the positive supply voltage.

The diagram illustrates the internal circuitry of a 40-pin audio IC, organized into three main sections: Input, Control, and Output.

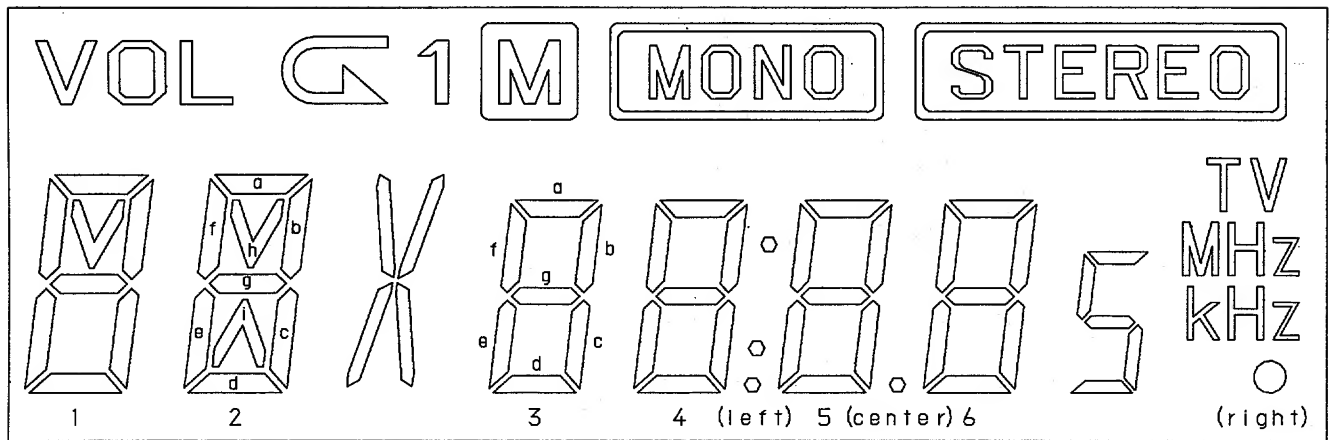
- Input Section (Pins 1-4):** Features four input channels labeled IN1-R, IN2-R, IN3-R, and IN4-R. Each input is connected to a switch and a 5K resistor, which then feeds into a 14 dB gain stage.
- Control Section (Pins 5-13):** Includes a MONO SW (Mono Switch) and a MUTE control. The MUTE control is connected to a 5K resistor and a 14 dB gain stage. The VOLUME control is connected to a 30K resistor and a 30K potentiometer. The TREBLE BOOST and BASS BOOST controls are connected to 4.6K resistors and a 2.4K resistor.
- Output Section (Pins 14-20):** Features four output channels labeled OUT1-L, OUT2-L, OUT3-L, and OUT4-L. Each output is connected to a switch and a 5K resistor, which then feeds into a 14 dB gain stage.
- Power and Ground (Pins 11, 12, 14):** Pin 11 is GND, Pin 12 is VDD, and Pin 14 is VSS.

The circuit is controlled by a CONTROL LOGIC block connected to pins 13 (CONT) and 14 (VSS).

[illegible]

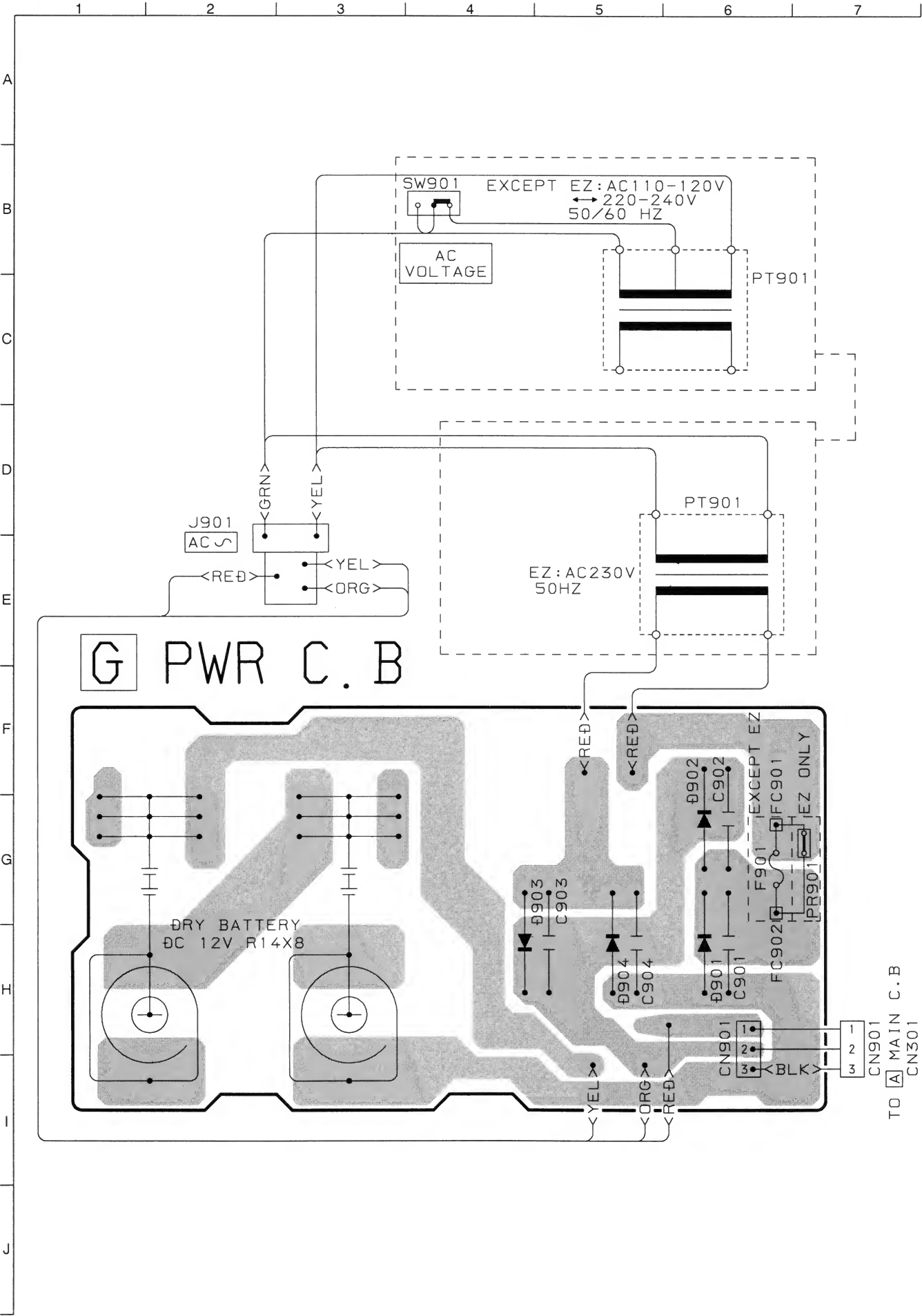
LCD DISPLAY

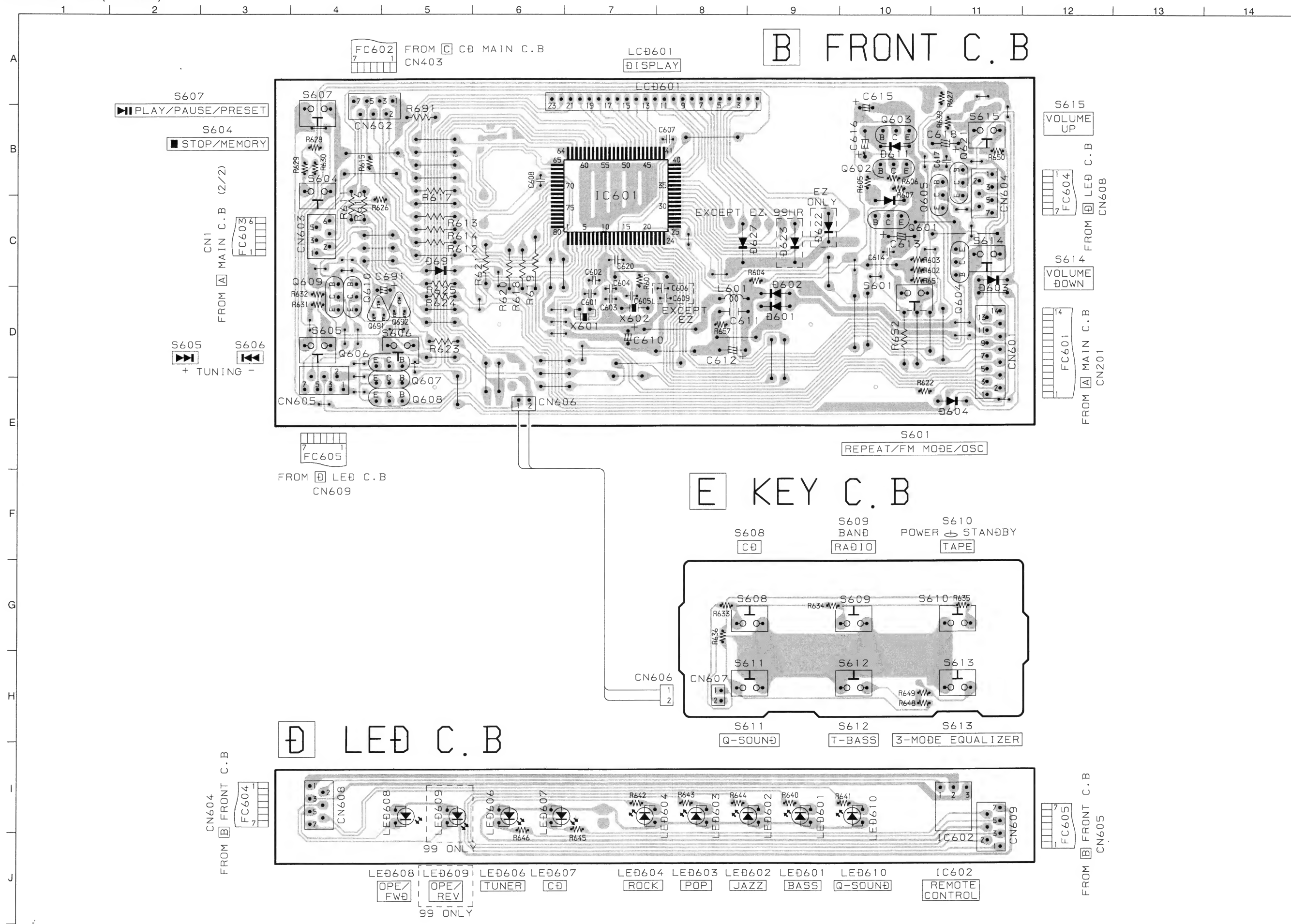
LCD HLC7365

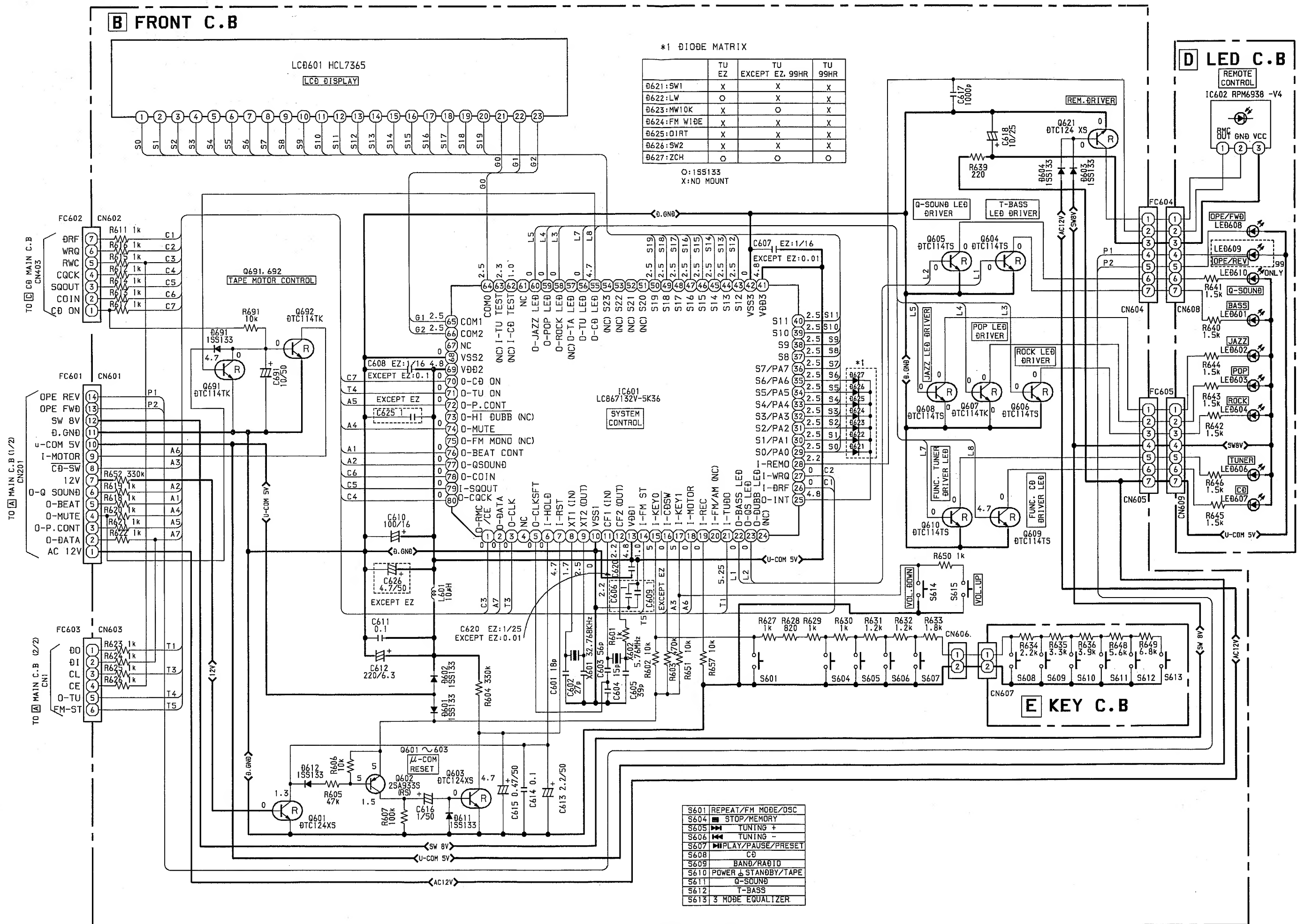


| NO. | COM. 1 | COM. 2 | COM. 3 |
|-----|--------|----------|------------|
| 1 | 2b | 2c | 2d |
| 2 | 1b | 1c | 1d |
| 3 | 1a | 1f | 1e |
| 4 | 1h | 1g | VOL |
| 5 | 2a | 2f | 2e |
| 6 | 2h | 2g | 2i |
| 7 | 3f | 3e | G |
| 8 | 3a | 3g | 3d |
| 9 | 3b | 3c | 1 |
| 10 | 4f | 4e | M |
| 11 | 4a | 4g | 4d |
| 12 | 4b | 4c | X |
| 13 | : | • (left) | MONO |
| 14 | 5f | 5e | • (right) |
| 15 | 5a | 5g | 5d |
| 16 | 5b | 5c | • (center) |
| 17 | 6f | 6e | STEREO |
| 18 | 6a | 6g | 6d |
| 19 | 6b | 6c | 5 |
| 20 | TV | MHz | kHz |
| 21 | COM. 1 | | |
| 22 | | COM. 2 | |
| 23 | | | COM. 3 |

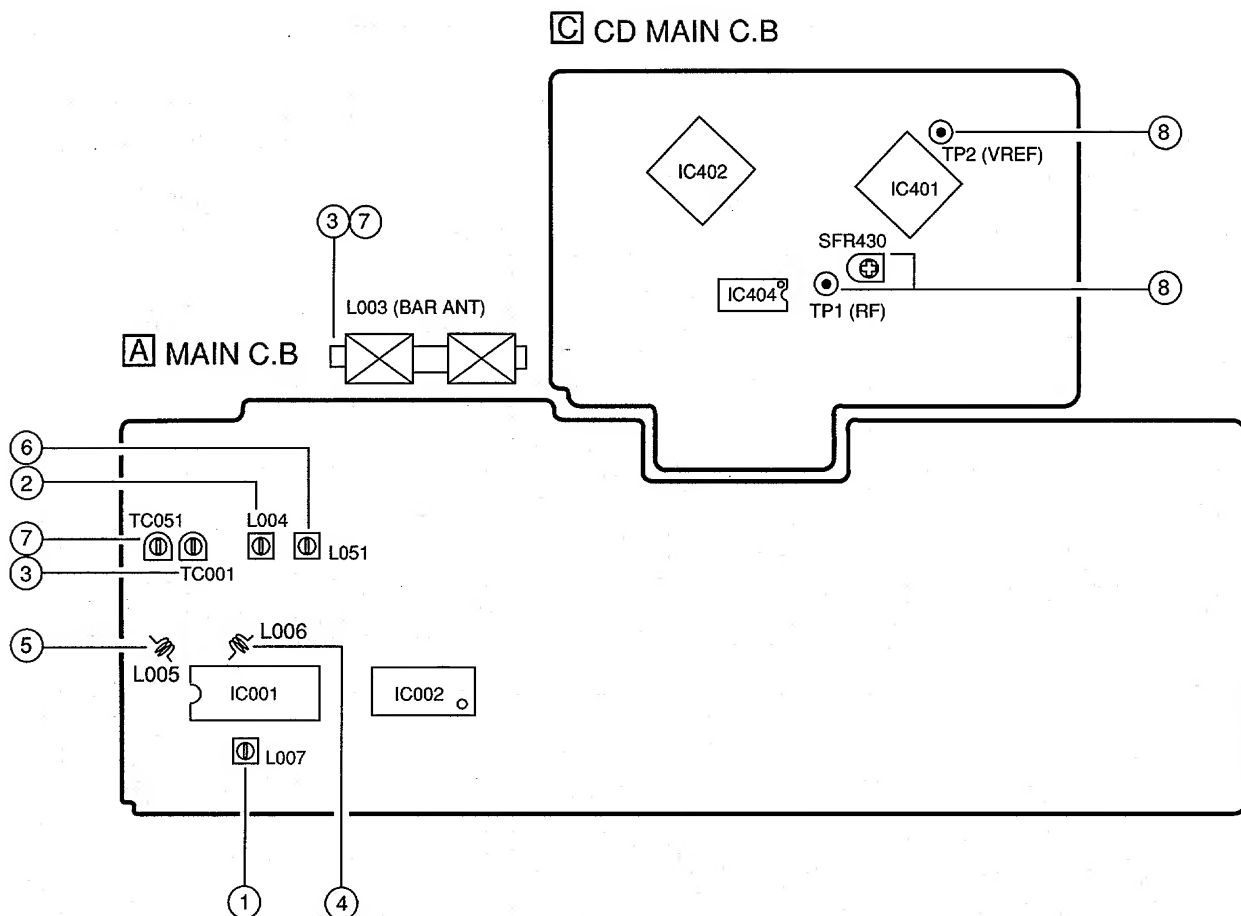
WIRING – 3 (PT)







ADJUSTMENT <TUNER / CD>

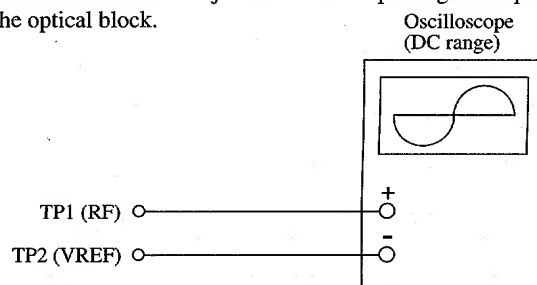


< TUNER SECTION >

1. AM (MW) IF Adjustment
L007 450 kHz
2. AM (MW) VT Adjustment
Settings : • Test point : TP3
• Adjustment location : L004
Method : Set to AM (MW) 1710kHz (HA, LH), 1602kHz (HR)
1611kHz (EZ) and adjust L004 so that the test point
is $6.0 \pm 0.05V$ (HA, LH), $5.6 \pm 0.05V$ (HR, EZ).
3. AM (MW) Tracking Adjustment
L003 600kHz (HA, LH), 603kHz (HR, EZ)
TC001 1400kHz (HA, LH), 1404kHz (HR, EZ)
4. FM VT Adjustment
Settings : • Test point : TP3
• Adjustment location : L006
Method : Set to FM 108MHz and adjust L006 so that the test
point is $6.0 \pm 0.05V$.
5. FM Tracking Adjustment
L005 108MHz
6. LW VT Adjustment<EZ>
Settings : • Test point : TP3
• Adjustment location : L051
Method : Set to LW 288kHz and adjust L051 so that the test
point is $4.5 \pm 0.05V$.
7. LW Tracking Adjustment<EZ>
L003 153kHz
TC051 288kHz

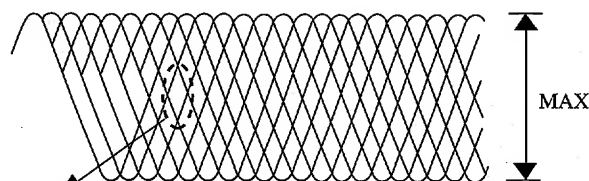
< CD SECTION >

8. Focus Bias Adjustment
Make the focus bias adjustment when replacing and repairing
the optical block.



- 1) Connect an oscilloscope to the test points TP1 (RF) and TP2 (VREF).
- 2) Turn on the power switch.
- 3) Insert test disc TCD-782 (YEDS-18) and play back the
second composition.
- 4) Adjust SFR430 so that RF signal of the test point TP1 (RF)
is MAX and CLEAREST.

RF signal waveform



EYE PATTERN

Must be CLEAR and MAX

VOLT / DIV: 50mV
TIME / DIV: 0.5μs

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity : Less than 18dB
 (THD 3%) [at 87.5 / 98 / 108MHz]
 Signal to noise ratio : Mono : More than 66dB
 Stereo : More than 58dB
 [at 98MHz]
 Distortion : Less than 3% [at 98MHz]
 Auto stop level : 24dB \pm 10dB
 [at 87.5 / 98 / 108MHz]
 Stereo separation : More than 20dB [at 98MHz]
 Intermediate frequency : 10.7MHz

<AM(MW) SECTION>

Sensitivity : Less than 48dB
 S/N (10dB) [at 600kHz]
 Less than 46dB
 [at 1000kHz]
 Less than 44dB
 [at 1400kHz]
 Signal to noise ratio : More than 30dB
 [at 600 / 1000 / 1400kHz]
 Distortion : Less than 3%
 [at 1000kHz]
 Auto stop level : Less than 70dB
 [at 600kHz]
 Less than 65dB
 [at 1000kHz]
 Less than 60dB
 [at 1400kHz]
 Intermediate frequency : 450kHz

<LW SECTION> (EZ)

Sensitivity : Less than 60dB [at 153kHz]
 (S/N 10dB) Less than 58dB at [198kHz]
 Less than 56dB [at 288kHz]
 Signal to noise ratio : More than 30dB
 [at 153 / 198 / 288kHz]
 Distortion : Less than 3% [at 198MHz]
 Auto stop level : Less than 80 / 75 / 70dB
 [at 153 / 198 / 288kHz]
 Intermediate frequency : 450kHz

<DECK SECTION>

Tape speed : 3000Hz +90 / -60Hz (TN-21ZVC-1816)
 3000Hz \pm 90Hz (TN-51RV-240)
 Wow & flutter : Less than 0.4% (R.M.S)
 Take-up torque : 30 ~ 60g-cm (FWD) (TN-21ZVC-1816)
 20 ~ 60g-cm (FWD) (TN-51RV-240)
 F.F & REW torque : 55 ~ 140g-cm (TN-21ZVC-1816)
 55 ~ 120g-cm (TN-51RV-240)
 Distortion : Less than 3% (PB, 1kHz, DC)
 Less than 5% (REC/PB, 1kHz, DC)
 S/N ratio : More than 35dB (PB, AC, DC)
 More than 25dB (REC/PB, AC, DC)
 Max Noise level : Less than 45mV (PB, DC, AC, VOL
 MAX)
 Min Noise level : Less than 1mV (PB, DC, VOL MIN)
 Less than 1.2mV (PB, AC, VOL MIN)
 Erasing ratio : More than 45dB
 Test tape : TTA-100
 TTA-210
 TTA-782
 TTA-602 (NORMAL)

IC DESCRIPTION

IC, LC867132V-5K36

| Pin No. | Pin Name | I/O | Description |
|---------|-----------------|-----|---|
| 1 | O-RMC/CE | O | CD read/write control output and TU CE. |
| 2 | O-DATA | O | Data output to LC72121M, M62495FP. |
| 3 | O-CLK | O | Output LC72121M CLK. |
| 4 | NC | — | Not Connected. |
| 5 | O-CK SFT | O | Clock shift output of the microcomputer. |
| 6 | I-HOLD | I | Hold status detection. |
| 7 | I-RST | I | Microcomputer reset. |
| 8 | XT1 (IN) | I | Connected to 32.768KHZ crystal oscillator. |
| 9 | XT2 (OUT) | O | |
| 10 | VSS1 | — | GND. |
| 11 | CF1 (IN) | I | Connected to 6MHZ Ceramic Filter. |
| 12 | CF2 (OUT) | O | |
| 13 | VDD1 | — | Power supply for microcomputer (+5V). |
| 14 | I-FM ST | I | FM STEREO status input. |
| 15 | I-KEYO | I | KEY AD input. |
| 16 | I-CD SW | I | CD DOOR SW status detection input. |
| 17 | I-KEY1 | I | KEY AD input. |
| 18 | I-MOTOR | I | DECK MECHA MOTOR status input. |
| 19 | I-REC | I | REC status input. |
| 20 | I-FM/AM (NC) | I | FM, AM status input. (Not connected) |
| 21 | I-TU DO | I | Data input from LC72121M. |
| 22 | O-BASS LED | O | BASS LED ON/OFF control output. |
| 23 | O-QS LED | O | Q-Sound LED ON/OFF control output. |
| 24 | O-DUBB LED (NC) | O | LED control output used for high-speed dubbing. (Not connected) |
| 25 | O-INT | O | INT DIODE MATRIX detection output. |
| 26 | I-DRF | I | CD RF level detection input. |
| 27 | I-WRQ | I | CD sub-code Q standby input. |
| 28 | I-REMO | I | Remote control input. |
| 29 | SO-PAO | O | LCD segment output and initial settings output. (SW) |
| 30 | S1/PA1 | O | LCD segment output and initial settings output. (LW) |
| 31 | S2/PA2 | O | LCD segment output and initial settings output. (MW 10K) |
| 32 | S3/PA3 | O | LCD segment output and initial settings output. (FM WIDE) |
| 33 | S4/PA4 | O | LCD segment output and initial settings output. (OIRT) |
| 34 | S5/PA5 | O | LCD segment output and initial settings output. (SW2) |
| 35 | S6/PA6 | O | LCD segment output and initial settings output. (ZCH) |
| 36 | S7/PA7 | O | LCD segment output and initial settings output. |
| 37~40 | S8~S11 | O | |
| 41 | VDD3 | — | Power supply for microcomputer (+5V). |
| 42 | VSS3 | — | GND. |
| 43~50 | S12~S19 | O | LCD segment output. |
| 51~54 | S20~S23 (NC) | O | LCD segment output. (Not Connected) |
| 55 | O-CD LED | O | LED ON/OFF control output for CD functions. |

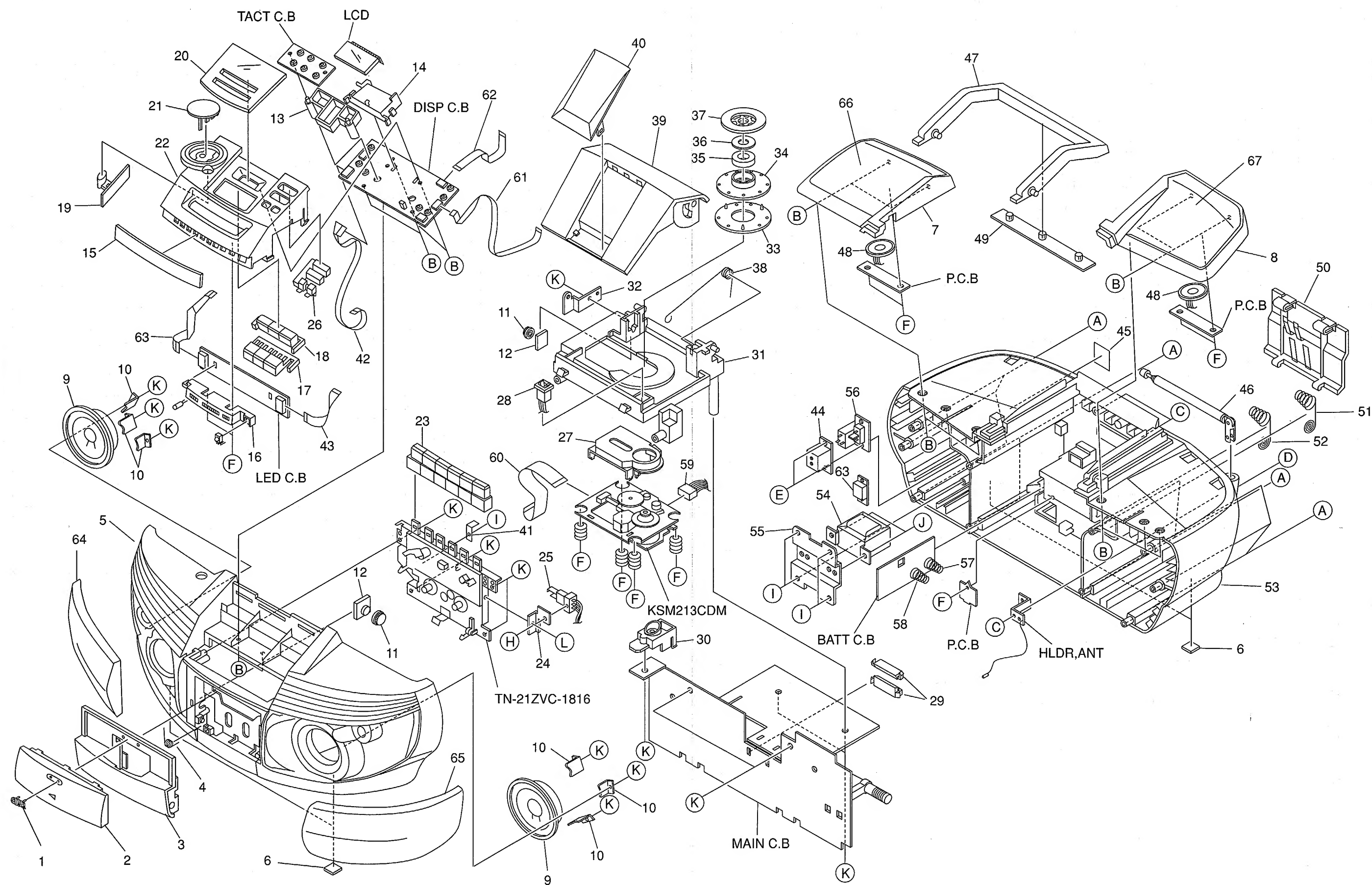
| Pin No. | Pin Name | I/O | Description |
|---------|----------------|-----|---|
| 56 | O-TU LED | O | LED ON/OFF control output for TU functions. |
| 57 | O-TA LED (NC) | O | LED ON/OFF control output for TAPE functions. (Not Connected) |
| 58 | O-ROCK LED | O | LED ON/OFF control output for ROCK. |
| 59 | O-POP LED | O | LED ON/OFF control output for POP. |
| 60 | O-JAZZ LED | O | LED ON/OFF control output for JAZZ. |
| 61 | NC | – | Not connected. |
| 62 | I-CD TEST (NC) | I | |
| 63 | I-TU TEST (NC) | I | |
| 64~66 | COM0~COM2 | O | LCD common output. |
| 67 | NC | – | Not connected. |
| 68 | VSS2 | – | GND. |
| 69 | VDD2 | – | Power supply for microcomputer (+5V). |
| 70 | O-CD ON | O | CD PWR control output. |
| 71 | O-TU ON | O | TU PWR control output. |
| 72 | O-P.CONT | O | Power supply control output. |
| 73 | O-HI DUBB (NC) | O | Dubbing speed control output. (Not connected) |
| 74 | O-MUTE | O | Main mute output. |
| 75 | O-FM MONO (NC) | O | FM force control MONO output. (Not connected) |
| 76 | O-BEAT CONT | O | BEAT switch over output. |
| 77 | O-QSOUND | O | Q-Sound ON/OFF output. |
| 78 | O-COIN | O | CD command output. |
| 79 | I-SQOUT | I | CD sub-code Q input. |
| 80 | O-CQCK | O | CLK for CD commands/sub-codes. |

| Pin No. | Pin Name | I/O | Description |
|---------|----------|-----|---|
| 1 | DEFI | I | Defect detection signal (DEF) input terminal. |
| 2 | TAI | I | A pull-down resistor is built in. (Connected to 0V) |
| 3 | PDO | O | External VCO control phase comparator output. |
| 4 | VVSS | – | Connected to internal VCO of PLL. (Connected to 0V) |
| 5 | ISET | I | PDO output current adjustment resistor connection. |
| 6 | VVDD | – | Voltage terminal for internal VCO of PLL. |
| 7 | FR | I | VCO frequency range adjustment. |
| 8 | VSS | – | Digital system ground. (Connected to 0V) |
| 9 | EFMO | O | EFM signal output pin. |
| 10 | EFMIN | I | EFM signal input pin. |
| 11 | T2 | I | Test pin. (Connected to 0V) |
| 12 | CLV+ | O | Disc motor control output. |
| 13 | CLV– | | |
| 14 | V/P | O | Rough servo/phase control automatic switching monitor output. Rough servo at "H". Phase control at "L". |
| 15 | HFL | I | Track detection signal input. |
| 16 | TES | I | Tracking error signal input. |
| 17 | TOFF | O | Tracking off output. |
| 18 | TGL | O | Tracking gain switching output. |
| 19 | JP+ | O | Track jump output. |
| 20 | JP– | | |
| 21 | PCK | O | EFM data playback monitor. Outputs 4.3218MHz when the phase is locked. (Not used) |
| 22 | FSEQ | O | Synchronization signal detection output. Outputs a "H" level when the synchronization signal detected from EFM signal and internally generated synchronization signal range. (Not used) |
| 23 | VDD | – | Digital system power supply. |
| 24 | SL+ | O | Serial data command sled signal output terminal from microprocessor. |
| 25 | SL– | | |
| 26 | NC | – | Not used. |
| 27 | PU IN | I | CD pickup inside limit switch. (Not used) |
| 28 | NC | – | Not used. |
| 29 | EMPH | O | De-emphasis monitor pin. A "H" level indicates playback of a de-emphasis disc. (Not used) |
| 30 | C2F | O | C2 flag output. (Not used) |
| 31 | DOUT | O | Digital output (EIAJ format). (Not used) |
| 32 | T3 | I | Test input. (Connected to 0V) |
| 33 | T4 | I | Test input. (Connected to 0V) |
| 34 | NC | – | Not used. |
| 35 | MUTEL | O | Left channel mute output. (Not used) |
| 36 | LVDD | – | Left channel power supply. |
| 37 | LCHO | O | Left channel output. |

| Pin No. | Pin Name | I/O | Description |
|---------|--------------------------|-----|---|
| 38 | LVSS | – | Left channel ground. |
| 39 | RVSS | – | Right channel ground. |
| 40 | RCHO | O | Right channel output. |
| 41 | RVDD | – | Right channel power supply. |
| 42 | MUTER | O | Right channel mute output. (Not used) |
| 43 | XVDD | – | Crystal oscillator power supply. |
| 44 | XOUT | O | Connections for a 16.9344MHz crystal oscillator element. |
| 45 | XIN | I | |
| 46 | XVSS | – | Crystal oscillator ground. |
| 47 | SBSY | O | Subcode block synchronization signal. (Not used) |
| 48 | EFLG | O | C1, C2 single and double error correction monitor pin. (Not used) |
| 49 | PW | O | Subcode P,Q,R,S,T,U and W output. (Not used) |
| 50 | SFSY | O | Subcode frame synchronization signal output. (Not used) |
| 51 | SBCK | I | Subcode readout clock input. (Connected to 0V) |
| 52 | FSX | O | Output for the 7.35kHz synchronization signal divided from the crystal oscillator. (Not used) |
| 53 | WRQ | O | Subcode Q output standby output. |
| 54 | RWC | I | Read/Write control input. |
| 55 | SQOUT | O | Subcode Q output. |
| 56 | COIN | I | Command input from the control microprocessor. |
| 57 | $\overline{\text{CQCK}}$ | I | Input for command input acquisition clock and SQOUT pin subcode readout clock. |
| 58 | RES | I | Chip reset input. |
| 59 | T11 | O | Test output. Leave open. (Not used) |
| 60 | 16M | O | 16.9344MHz output. (Not used) |
| 61 | 4.2M | O | 4.2336MHz output. |
| 62 | T5 | I | Test input. (Connected to 0V) |
| 63 | $\overline{\text{CS}}$ | I | Chip select input. (Connected to 0V) |
| 64 | T1 | I | Test input. (Connected to 0V) |

| Pin No. | Pin Name | I/O | Description |
|---------|----------|-----|---|
| 1 | FIN2 | I | Connected to pickup photo-diode. Adding with FIN1 pin generates RF signal, and subtracting from FIN1 generates FE signal. |
| 2 | FIN1 | I | Connected to pickup photo-diode. |
| 3 | E | I | Connected to pickup photo-diode. Subtracting from F pin generates TE signal. |
| 4 | F | I | Connected to pickup photo-diode. |
| 5 | TB | I | Input DC components of TE signal. |
| 6 | TE- | O | Connected to TE pin with resistor set TE signal gain. |
| 7 | TE | O | Output TE signal. |
| 8 | TESI | I | Input TES (TRACK ERROR SENSE) comparator. Band pass and input TE signal. |
| 9 | SCI | I | Input shock detection. |
| 10 | TH | I | Establish tracking gain value. |
| 11 | TA | O | TA amplifier output. |
| 12 | TD- | I | Compose tracking phase compensation value between TD and VR pins. |
| 13 | TD | O | Used for tracking phase compensation setting. |
| 14 | JP | I | Establish amplitude of tracking jump signal (kick pulse). |
| 15 | TO | O | Output tracking control signal. |
| 16 | FD | O | Output focusing control signal. |
| 17 | FD- | I | Compose focusing phase compensation value between FD and FA pins. |
| 18 | FA | O | Compose focusing phase compensation value between FD- and FA- pins. |
| 19 | FA- | I | Compose focusing phase compensation value between FA and FE pins. |
| 20 | FE | O | Output FE signal. |
| 21 | FE- | I | Connected to FE pin with resistor set FE signal gain. |
| 22 | AGND | - | Analog GND. |
| 23 | SP | O | Output single-end for CV+ and CV- pins input signal. |
| 24 | SPI | I | Spindle amplifier input. |
| 25 | SPG | I | Connect resistor for gain setting at spindle 12cm mode. (Not used) |
| 26 | SP- | I | Connect spindle phase compensation value with SPD pin. |
| 27 | SPD | O | Output spindle control signal. |
| 28 | SLEQ | I | Connect sled phase compensation value. |
| 29 | SLD | O | Output sled control signal. |
| 30 | SL- | I | Input sled sending signal from DSP. |
| 31 | SL+ | | |
| 32 | JP- | I | Input tracking jump signal from DSP. |
| 33 | JP+ | | |
| 34 | TGL | I | Input tracking gain control signal from DSP. TGL = "H" : Gain low. |
| 35 | TOFF | I | Input tracking off control signal from DSP. TOFF = "H" : Off. |
| 36 | TES | O | Output TES signal to DSP. |
| 37 | HFL | O | HIGH FREQUENCY LEVEL: Detects whether main-beam is on pit or mirror position. |
| 38 | SLOF | I | Input sled servo off control. |
| 39 | CV- | I | Input CLV error signal from DSP. |
| 40 | CV+ | | |

| Pin No. | Pin Name | I/O | Description |
|---------|----------|-----|---|
| 41 | RFSM | O | Output RF. |
| 42 | RFS- | O | Establish RF gain and 3T compensation value from EFM signal with RFSM pin. |
| 43 | SLC | O | SLICE LEVEL CONTROL: Control data slice level by DSP with RF waveform. |
| 44 | SLI | I | Control data slice level by DSP. |
| 45 | DGND | - | Digital GND. |
| 46 | FSC | O | Connected to focus search smoothing capacitor. |
| 47 | TBC | I | TRACKING BALANCE CONTROL: Establish EF balance variable range. |
| 48 | NC | - | Not used. |
| 49 | DEF | O | Output disc defect detection. |
| 50 | CLK | I | Input reference clock. Inputs 4.23MHz from DSP. |
| 51 | CL | I | Input microcomputer command clock. |
| 52 | DAT | I | Input microcomputer command data. |
| 53 | CE | I | Input microcomputer command chip enable. |
| 54 | DRF | O | Detect RF: Output RF level detection. |
| 55 | FSS | I | FOCUS SEARCH SELECT: Switches focus search mode (between \pm search and + search against reference voltage). (Not used) |
| 56 | VCC2 | - | Servo/digital VCC. |
| 57 | REF1 | - | Connected to reference voltage bypass condenser. |
| 58 | VR | O | Output reference voltage. |
| 59 | LF2 | - | Establish value in detecting disc defect. |
| 60 | PHI | - | Connected to capacitor used to hold peak of RF signal. |
| 61 | BHI | - | Connected to capacitor used to hold bottom of RF signal. |
| 62 | LDD | O | APC-circuit output pin. |
| 63 | LDS | I | APC-circuit input pin. |
| 64 | VCC1 | - | RF VCC. |



MECHANICAL PARTS LIST 1 / 1

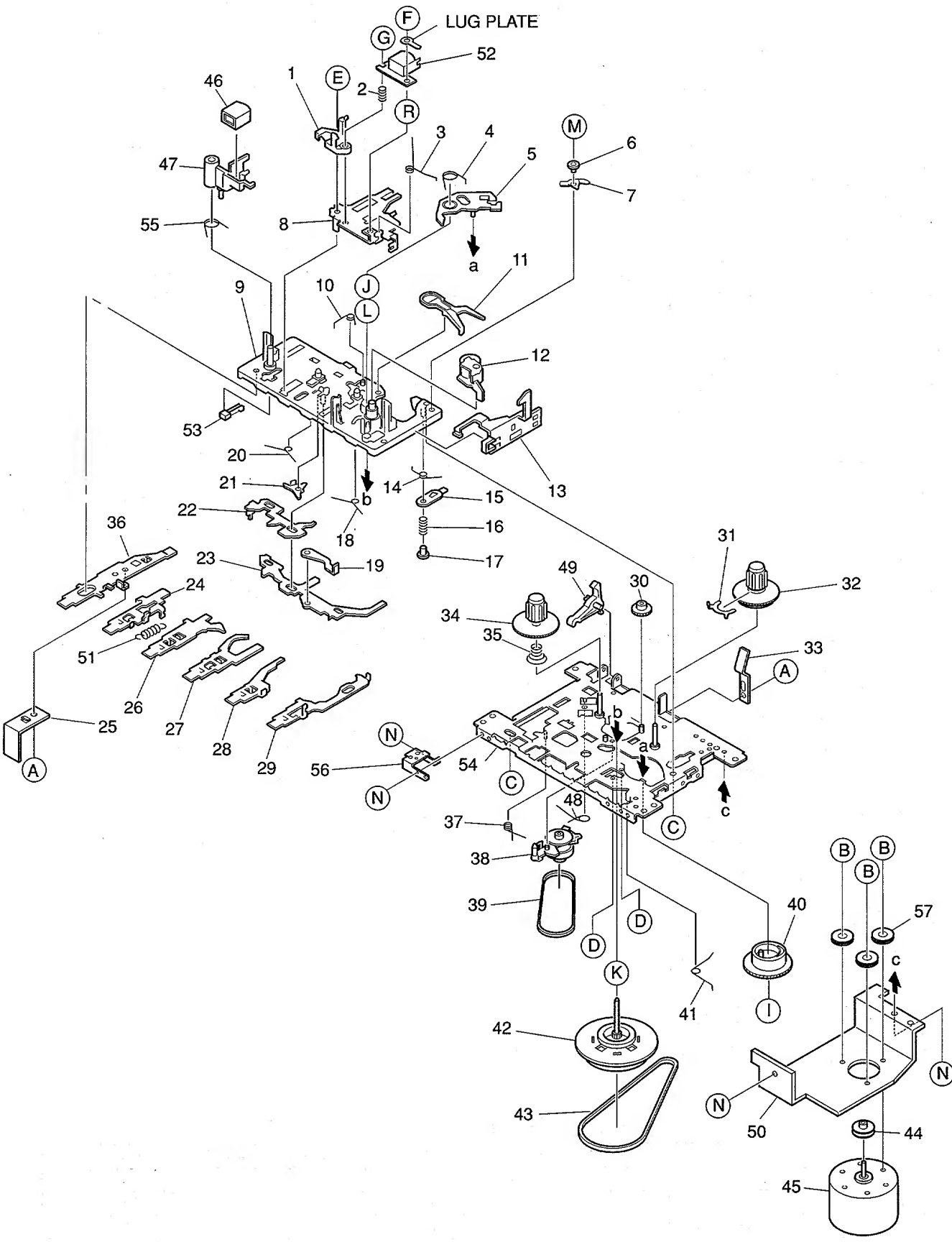
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO. | PART NO. | KANRI NO. | DESCRIPTION | REF. NO. | PART NO. | KANRI NO. | DESCRIPTION |
|----------|----------------|-----------|------------------------------------|----------|----------------|-----------|---------------------------------------|
| 1 | 8Z-B00-020-010 | | BADGE, AIWA 30 GOLD | 43 | 8Z-CH4-620-010 | | FF-CABLE, 7P FR-LED |
| 2 | 8Z-CH4-007-010 | | WINDOW, CASS<EXCEPT 99HR, 99EZ> | 44 | 87-A90-086-010 | | COVER, AC-SOCKET |
| 2 | 8Z-CHR-003-010 | | WINDOW, CASS 24<99HR, 99EZ> | 45 | 87-CD6-041-010 | | PLATE, AC<89EZ, 99EZ> |
| 3 | 8Z-CHE-003-010 | | BOX, CASS 14<EXCEPT 99HR, 99EZ> | 46 | 8Z-CH4-640-010 | | ANT, ROD |
| 3 | 8Z-CHR-009-010 | | BOX, CASS 24<99HR, 99EZ> | 47 | 8Z-CH4-009-010 | | HANDL, ARM |
| 4 | 8Z-CH4-205-010 | | SPR-T, CASS | 48 | 8Z-CH4-645-010 | | SPKR, MAYLOR 80HM SILVER |
| 5 | 8Z-CHE-002-010 | | CABI, FR 14A<EXCEPT 99HR, 99EZ> | 49 | 8Z-CH4-010-010 | | HANDL, GRIP |
| 5 | 8Z-CHR-002-010 | | CABI, FR 24A<99HR, 99EZ> | 50 | 8Z-CH4-008-010 | | LID, BATT |
| 6 | 86-CT4-218-010 | | CUSHION, FOOT/PORON | 51 | 87-CD6-223-010 | | SPR-C, BATT LINK L |
| 7 | 8Z-CH4-019-110 | | CABI, TOP 2L | 52 | 87-CD6-214-010 | | SPR-C, BATT LINK |
| 8 | 8Z-CH4-020-110 | | CABI, TOP 2R | 53 | 8Z-CHE-032-010 | | CABI, REAR LH |
| 9 | 88-CD5-602-010 | | SPKR 4'3.2<EXCEPT 89EZ, 99EZ> | 54 | 88-CH6-627-010 | | PT, E<89EZ, 99EZ> |
| 9 | 88-CD5-603-010 | | SPKR, 10 70HM<89EZ, 99EZ> | 54 | 88-CH6-628-010 | | PT, H<EXCEPT 89EZ, 99EZ> |
| 10 | 8Z-CH4-204-010 | | HLDR, SPEAKER | 55 | 8Z-CH4-209-010 | | HLDR, PT<EXCEPT 99HR, 99EZ> |
| 11 | 84-CD5-215-010 | | GEAR | 55 | 8Z-CH4-220-010 | | HLDR, PT B<99HR, 99EZ> |
| 12 | 84-CD5-216-010 | | BRACKET | 56 | 87-A60-178-010 | | JACK, AC E W/SW |
| 13 | 8Z-CH4-216-010 | | HLDR, FUNC-PWB | 57 | 87-CD6-222-010 | | SPR-C, BATT (-) L |
| 14 | 8Z-CH4-201-010 | | HLDR, LCD | 58 | 87-CD6-213-010 | | SPR-C, BATT (-) |
| 15 | 8Z-CHE-018-010 | | WINDOW, LED 14A<89HR, 89EZ> | 59 | 8Z-CH4-614-010 | | CONN ASSY, 6P CD-ME |
| 15 | 8Z-CHE-006-010 | | WINDOW, LED 14LH<89LH, 89HA> | 60 | 8Z-CH4-618-010 | | FF-CABLE, 16P CD-RF |
| 15 | 8Z-CHR-017-010 | | WINDOW, LED 24A<99HR, 99EZ> | 61 | 8Z-CH4-621-010 | | FF-CABLE, 7P CD-FR |
| 16 | 8Z-CH4-210-010 | | HLDR, LED | 62 | 8Z-CH4-619-010 | | FF-CABLE, 14P AF-FR |
| 17 | 8Z-CH4-027-010 | | BTN, EQ | 63 | 87-A91-369-010 | | SW, AC SL 2 2 2 SDKGA41700<EXCEPT EZ> |
| 18 | 8Z-CH4-026-010 | | BTN, FUNC | 64 | 8Z-CHE-014-010 | | GRILLE, FR L 14<EXCEPT 99HR, 99EZ> |
| 19 | 8Z-CH4-025-010 | | BTN, REPEAT | 64 | 8Z-CHR-013-010 | | GRILLE, FR L 24<99HR, 99EZ> |
| 20 | 8Z-CHE-011-010 | | WINDOW, LCD<89HR, 89LH, 89HA> | 65 | 8Z-CHE-015-010 | | GRILLE, FR R 14<EXCEPT 99HR, 99EZ> |
| 20 | 8Z-CHE-012-010 | | WINDOW, LCD 14EZ<89EZ> | 65 | 8Z-CHR-014-010 | | GRILLE, FR R 24<99HR, 99EZ> |
| 20 | 8Z-CHR-010-010 | | WINDOW, LCD 24<99HR> | 66 | 8Z-CHE-016-010 | | GRILLE, TOP L 14<EXCEPT ED99> |
| 20 | 8Z-CHR-011-010 | | WINDOW, LCD 24EZ<99EZ> | 66 | 8Z-CHR-015-010 | | GRILLE, TOP L 24<99HR, 99EZ> |
| 21 | 8Z-CH4-023-110 | | BTN, VOL | 67 | 8Z-CHE-017-010 | | GRILLE, TOP R 14<EXCEPT ED99> |
| 22 | 8Z-CHE-009-010 | | PANEL, LCD<EXCEPT 99HR, 99EZ> | 67 | 8Z-CHR-016-010 | | GRILLE, TOP R 24<99HR, 99EZ> |
| 22 | 8Z-CH4-014-010 | | PANEL, LCD51<99HR, 99EZ> | A | 87-B10-242-010 | | UT2+3-30 W/O CR |
| 23 | 8Z-CH4-028-010 | | KEY, CASS 21<EXCEPT 99HR, 99EZ> | B | 87-B10-239-010 | | QT2+3-8 W/O CR |
| 23 | 8Z-CH4-029-010 | | KEY, CASS 51<99HR, 99EZ> | C | 87-644-096-410 | | UT1+3-10 CR |
| 24 | 8Z-CH4-214-010 | | HLDR, REC-SW 21<EXCEPT 99HR, 99EZ> | D | 87-254-097-410 | | U+3-12 CR |
| 24 | 8Z-CH4-215-010 | | HLDR, REC-SW 51<99HR, 99EZ> | E | 87-751-075-410 | | VT2+2.6-10 |
| 25 | 87-A91-151-010 | | SW, LEAF 1P2T/TC48-021 | F | 87-342-074-010 | | UT2+2.6-8 |
| 26 | 8Z-CH4-024-010 | | BTN, CD | G | 87-751-094-410 | | VT2+3-6 W10SL0T |
| 27 | 88-CH6-019-010 | | PANEL, CD | H | 87-261-037-410 | | V+2-10 GLD |
| 28 | 87-036-389-010 | | SW, PUSH LOCK | I | 87-661-100-410 | | VFT1+3-16 |
| 29 | 8Z-CH4-208-010 | | HLDR, PWB | J | 87-067-566-010 | | TAPPING SCREW, VFTT+3-6 |
| 30 | 8Z-CH4-030-110 | | COVER, PH | K | 87-741-095-410 | | UT2+3-8 GLD |
| 31 | 8Z-CH4-003-010 | | CHAS, CD | L | 87-571-032-410 | | VIT+2-3 |
| 32 | 8Z-CH4-207-010 | | HLDR, OIL-DMPR | | | | |
| 33 | 8Z-CH4-212-010 | | RING, CHUCK | | | | |
| 34 | 8Z-CH4-211-010 | | BASE, CHUCK | | | | |
| 35 | 87-036-368-010 | | MAGNET | | | | |
| 36 | 84-CD5-217-010 | | PLATE, MAGNET | | | | |
| 37 | 85-CD7-217-010 | | HLDR, CHUCK A | | | | |
| 38 | 8Z-CH4-206-010 | | SPR-T, CD | | | | |
| 39 | 8Z-CHE-008-010 | | BOX, CD<EXCEPT 99HR, 99EZ> | | | | |
| 39 | 8Z-CHR-008-010 | | BOX, CD 24<99HR, 99EZ> | | | | |
| 40 | 8Z-CH4-005-010 | | WINDOW, CD | | | | |
| 41 | 8Z-CH4-213-010 | | SPR-P, REC-SW 21 | | | | |
| 42 | 8Z-CH4-622-010 | | FF-CABLE, 6P TU-FR | | | | |

COLOR NAME TABLE

| Basic color symbol | Color | Basic color symbol | Color | Basic color symbol | Color |
|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| B | Black | C | Cream | D | Orange |
| G | Green | H | Gray | L | Blue |
| LT | Transparent Blue | N | Gold | P | Pink |
| R | Red | S | Silver | ST | Titan Silver |
| T | Brown | V | Violet | W | White |
| WT | Transparent White | Y | Yellow | YT | Transparent Yellow |
| LM | Metallic Blue | LL | Light Blue | GT | Transparent Green |
| LD | Dark Blue | DT | Transparent Orange | | |

TAPE MECHANISM EXPLODED VIEW 1 / 1 <CSD-ED88/89 TN21ZVC-1816>

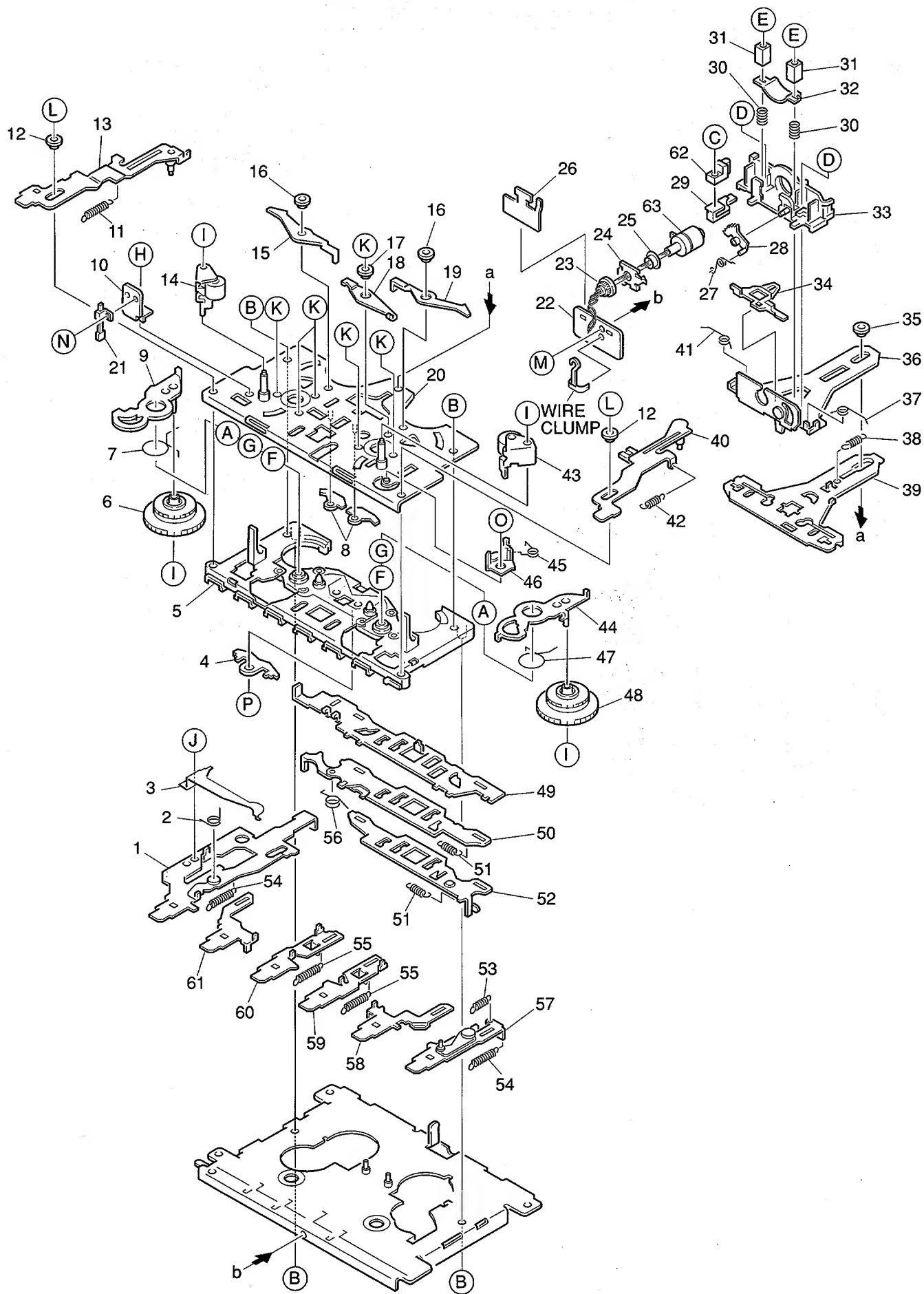


TAPE MECHANISIM PARTS LIST 1 / 1 <CSD-ED88/89 TN21ZVC-1816>

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF.NO. | PART NO. | KANRI NO. | DESCRIPTION | REF.NO. | PART NO. | KANRI NO. | DESCRIPTION |
|---------|----------------|-----------|------------------------|---------|----------------|-----------|-----------------------------|
| 1 | S1-921-030-4A0 | | HEAD BASE | 41 | S1-921-140-160 | | E ACTUATOR SPRING |
| 2 | S1-821-030-070 | | AZIMUTH SPRING | 42 | S1-921-093-030 | | FLYWHEEL ASSY |
| 3 | S1-921-030-090 | | PANEL P SPRING | 43 | S1-921-090-040 | | MAIN BBELT |
| 4 | S1-921-260-050 | | GEAR PLATE SPRING | 44 | S1-921-120-010 | | MOTOR PULLEY |
| 5 | S1-921-265-020 | | GEAR PLATE ASSY | 45 | S6-002-030-220 | | MOTOR EG530AD-2B |
| 6 | S1-921-140-370 | | P ARM COLLER | 46 | S6-209-100-100 | | E HEAD PH-K380-MS1 |
| 7 | S1-921-140-340 | | P ARM | 47 | S1-921-030-050 | | MG ARM |
| 8 | S1-921-030-110 | | HEAD PANEL | 48 | S1-921-140-210 | | REC BUTTON LEVER SPRING |
| 9 | S1-921-143-160 | | BASE ASSY | 49 | S1-821-100-690 | | RECORD SAFETY LEVER |
| 10 | S1-921-141-8A0 | | M CONTROL SPRING | 50 | S1-921-120-540 | | MOTOR BRACKET |
| 11 | S1-921-260-4A0 | | SENSING LEVER | 51 | S1-821-010-500 | | PLAY BUTTON LEVER SPRING |
| 12 | S1-921-043-100 | | PINCH ROLLER ARM ASSY | 52 | S6-202-010-920 | | R.P HEAD MS15R-AK0N1 |
| 13 | S1-921-130-010 | | EJECT SLIDE LEVER | 53 | S6-401-011-490 | | LEAF SW MSW-1541T |
| 14 | S1-921-141-3A0 | | P CONTROL SPRING | 54 | S1-921-015-010 | | CHASSIS ASSY |
| 15 | S1-921-140-550 | | PAUSE LEVER(E) | 55 | S1-921-030-100 | | MG ARM SPRING |
| 16 | S1-921-140-120 | | PAUSE LEVER SPRING | 56 | S1-921-010-160 | | SIDE BRACKET |
| 17 | S1-921-140-110 | | PAUSE STOPPER | 57 | S1-821-120-660 | | MOTOR RUBBER |
| 18 | S1-921-140-150 | | BUTTON LEVER SPRING(B) | A | S9-P04-200-310 | | C TAPPING SCREW 2-3 |
| 19 | S1-821-011-590 | | E KICK LEVER | B | S1-851-140-180 | | MOTOR COLLER SCREW |
| 20 | S1-921-140-140 | | BUTTON LEVER SPRING(A) | C | S9-B10-200-510 | | P TAPPING BIND SCREW M2-5 |
| 21 | S1-921-140-200 | | PR STOPPER | D | S9-C07-204-510 | | SCREW,TAPPING(CAMERA)M2-4.5 |
| 22 | S1-921-140-090 | | SWITCH ACTUATOR | E | S9-P01-200-610 | | SCREW,M2-6 |
| 23 | S1-921-140-080 | | PUSH BUTTON ACTUATOR | F | S9-P01-200-310 | | SCREW,M2-3 |
| 24 | S1-921-140-190 | | PLAY BUTTON LEVER | G | S9-F08-200-710 | | AZIMUTH SCREW M2-7 |
| 25 | S1-510-020-020 | | REC SPRING PLATE | H | S9-P05-200-810 | | S TAPPING SCREW M2-8 |
| 26 | S1-921-140-040 | | REW BUTTON LEVER | I | S9-W02-300-100 | | P WASHER CUT 1.2-3.8-0.3 |
| 27 | S1-921-140-050 | | FF,BUTTON REVER | J | S9-W02-500-100 | | P WASHER CUT 1.45-3.8-0.5 |
| 28 | S1-921-140-060 | | STOP BUTTON LEVER | K | S9-W01-400-100 | | P WASHER 2-3.5-0.4 |
| 29 | S1-921-140-600 | | PAUSE BUTTON LEVER | L | S9-W01-130-200 | | P WASHER 2.1-4-0.13 |
| 30 | S1-821-100-700 | | FF GEAR | M | S9-P08-203-010 | | PS TAPPING SCREW M2-3 |
| 31 | S1-921-050-060 | | SENSOR | N | S9-P04-200-410 | | C TAPPING SCREW M2-4 |
| 32 | S1-921-053-030 | | TAKE UP REEL ASSY | | | | |
| 33 | S1-821-100-980 | | PACK SPRING | | | | |
| 34 | S1-921-053-040 | | SUPPLY REEL ASSY | | | | |
| 35 | S1-821-100-990 | | BACK TENSION SPRING | | | | |
| 36 | S1-921-140-030 | | REC BUTTON LEVER | | | | |
| 37 | S1-921-140-170 | | P.S.LEVER SPRING | | | | |
| 38 | S1-921-073-040 | | RF CLUTCH ASSY | | | | |
| 39 | S1-921-070-030 | | RF BELT | | | | |
| 40 | S1-921-260-020 | | CAM GEAR | | | | |

TAPE MECHANISM EXPLODED VIEW 1 / 2 <CSD-ED99 TN51RV-240>

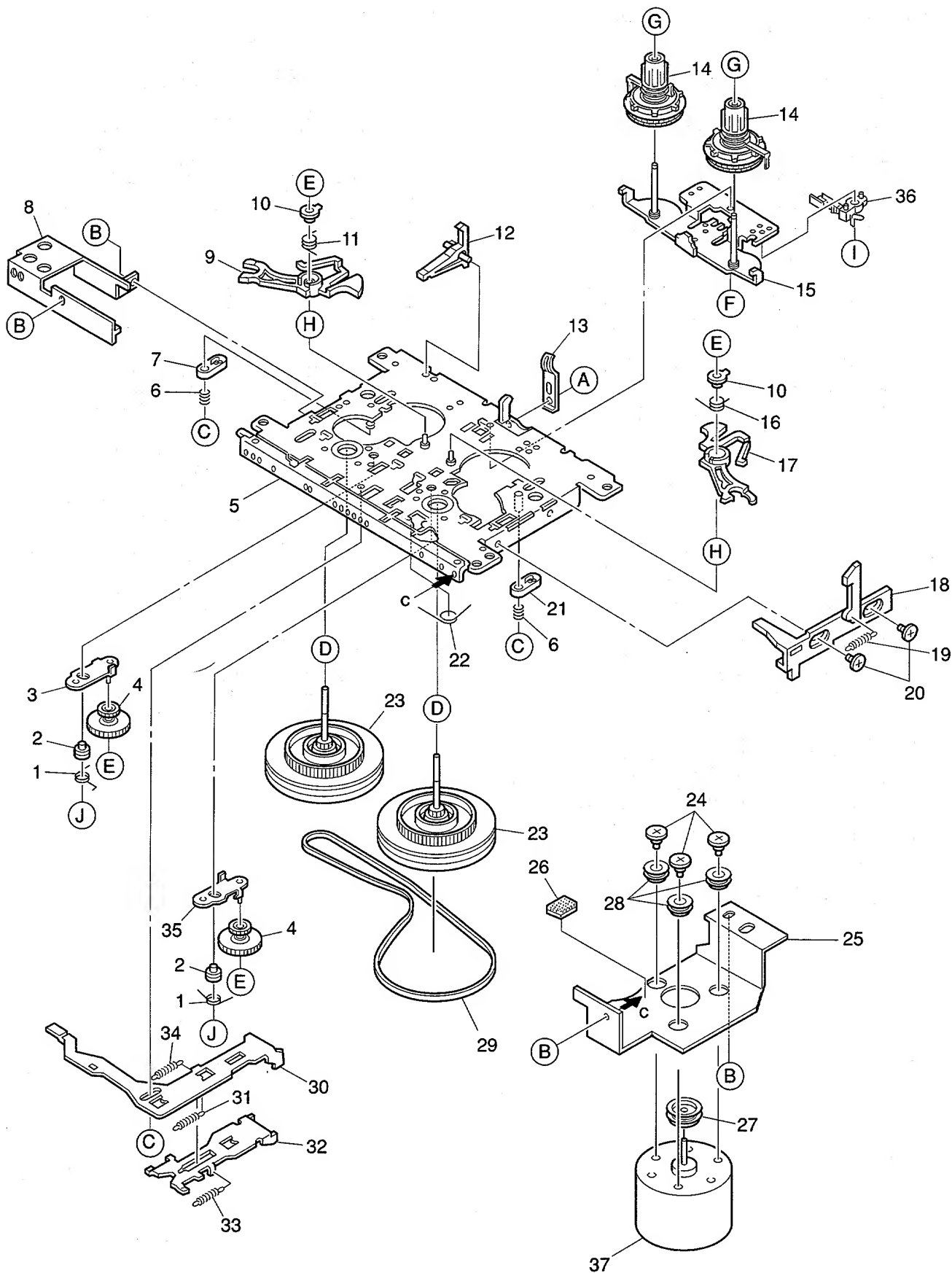


TAPE MECHANISM PARTS LIST 1 / 2 <CSD-ED99 TN51RV-240>

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO. | PART NO. | KANRI NO. | DESCRIPTION | REF. NO. | PART NO. | KANRI NO. | DESCRIPTION |
|----------|----------------|-----------|-------------------------|----------|----------------|-----------|-------------------------------|
| 1 | S1-851-023-190 | | REC BUTTON LEVER ASSY | 46 | S1-851-030-030 | | TURN OVER ARM |
| 2 | S1-851-020-620 | | E-LOCK ARM SPRING | 47 | S1-851-050-040 | | T GEAR ARM(F)SPR |
| 3 | S1-851-020-570 | | E-HEAD ARM | 48 | S1-851-050-030 | | T GEAR ARM(F) |
| 4 | S1-851-020-410 | | FF CONTROL ARM | 49 | S1-851-020-560 | | SLIDE PLATE |
| 5 | S1-851-025-040 | | BUTTON BASE ASSY | 50 | S1-851-023-140 | | LOCK ACTUATOR ASSY |
| 6 | S1-851-060-020 | | T GEAR ARM(R) | 51 | S1-851-020-670 | | SW ACTUATOR SPRING |
| 7 | S1-851-060-030 | | T GEAR ARM(R)SPR | 52 | S1-851-023-150 | | SW ACTUATOR ASSY |
| 8 | S1-851-180-100 | | RC ARM | 53 | S1-851-020-270 | | PULL ARM SPRING |
| 9 | S1-851-063-020 | | T GEAR ARM ASSY (R)ASSY | 54 | S1-851-020-700 | | PROGRAM BUTTON LEVER SPRING |
| 10 | S1-851-030-050 | | TURN OVER SW BRACKET | 55 | S1-851-020-690 | | FF BUTTON LEVER SPRING |
| 11 | S1-851-020-680 | | MODE BUTTON SPRING | 56 | S1-851-020-760 | | LOCK RELEASE SPRING |
| 12 | S1-851-020-600 | | LEVER COLLER | 57 | S1-851-023-180 | | PROGRAM BUTTON LEVER ASSY |
| 13 | S1-851-023-240 | | MODE BUTTON LEVER ASSY | 58 | S1-851-020-570 | | STOP BUTTON LEVER |
| 14 | S1-851-105-020 | | PINCH ROLLER (R)ASSY | 59 | S1-851-020-080 | | FF BUTTON LEVER (F) |
| 15 | S1-851-180-060 | | AUTO CONTROL ARM(R) | 60 | S1-851-020-090 | | FF BUTTON LEVER (R) |
| 16 | S1-851-180-120 | | C ARM COLLAR SCREW | 61 | S1-851-020-670 | | PLAY BUTTON LEVER |
| 17 | S1-851-020-580 | | PAUSE ARM COLLER | 62 | S6-205-100-120 | | E HEAD EM-1636 |
| 18 | S1-851-180-080 | | PAUSE ARM | 63 | S6-205-060-010 | | RP HEAD RC-889 |
| 19 | S1-851-180-050 | | AUTO CONTROL ARM(F) | A | S9-999-000-130 | | P WASHER 1.75-4-0.3 |
| 20 | S1-851-183-030 | | SUB CHASSIS ASSY | B | S9-674-000-000 | | P TAP SCREW M2-6 |
| 21 | S6-401-010-990 | | LEAF SW MSW-1473NBK | C | S9-696-000-000 | | CAMERAS TAPING SCREW M1.7-4.5 |
| 22 | S1-851-010-060 | | HW TERMINAL PLATE | D | S9-695-000-000 | | CAMERA S TAP SCREW M1.7- |
| 23 | S1-851-040-440 | | PINION GEAR | E | S9-999-200-360 | | SCREW M2-12 (+/-) |
| 24 | S1-851-040-180 | | HOLDER | F | S9-786-000-000 | | P WASHER 2-3.5-0.3 |
| 25 | S1-851-040-270 | | H HOLDER SPRING | G | S9-999-030-090 | | P WASHER 1.45-4-0.5 |
| 26 | S1-851-040-410 | | H SHIELD PLATE | H | S9-999-130-060 | | CAMERA S TAPPING SCREW M1.7-2 |
| 27 | S1-851-040-250 | | H TURN OVER SPRING | I | S9-421-000-000 | | P WASHER 1.2-3-0.25 |
| 28 | S1-851-040-200 | | H TURN OVER GEAR | J | S9-C19-173-030 | | TSS 1.7X3 |
| 29 | S1-851-040-260 | | E HEAD HOLDER | K | S9-C20-178-510 | | SCREW,TS 1.7-8.5 |
| 30 | S1-865-020-590 | | AZIMUTH SPRING | L | S9-185-000-000 | | C TAP SCREW M2-10 |
| 31 | S1-851-040-360 | | SCREW HOLDER | M | S9-999-200-120 | | TWO LOCK SCREW M2-4 |
| 32 | S1-851-040-240 | | HEAD SPRING PLATE | N | S9-077-000-000 | | TAMS SCREW M2-4 (+) |
| 33 | S1-851-040-390 | | HEAD MOUNT | O | S9-502-000-000 | | E RING S2.0 |
| 34 | S1-851-040-210 | | HEAD SLIDE PLATE | P | S9-C19-174-030 | | SCREW,TSS M1.7-4 |
| 35 | S1-851-040-550 | | H.P.COLLAR SCREW | Q | S9-999-000-160 | | P WASHER 2.8-6-0.5 |
| 36 | S1-851-040-140 | | HEAD PANEL | | | | |
| 37 | S1-851-040-280 | | PINCH ROLLER SPRING (F) | | | | |
| 38 | S1-851-040-090 | | R.C.PLATE SPRING | | | | |
| 39 | S1-851-040-150 | | R.C. PLATE | | | | |
| 40 | S1-851-023-230 | | PAUSE BUTTON LEVER ASSY | | | | |
| 41 | S1-851-040-290 | | PINCH ROLLER SPRING (R) | | | | |
| 42 | S1-800-110-230 | | PAUSE SPRING | | | | |
| 43 | S1-851-095-020 | | PINCH ROLLER (F)ASSY | | | | |
| 44 | S1-851-053-020 | | T GEAR ARM (F) ASSY | | | | |
| 45 | S1-851-030-040 | 0E | TURN OVER SPRING | | | | |

TAPE MECHANISM EXPLODED VIEW 2 / 2 <CSD-ED99 TN51RV-240>

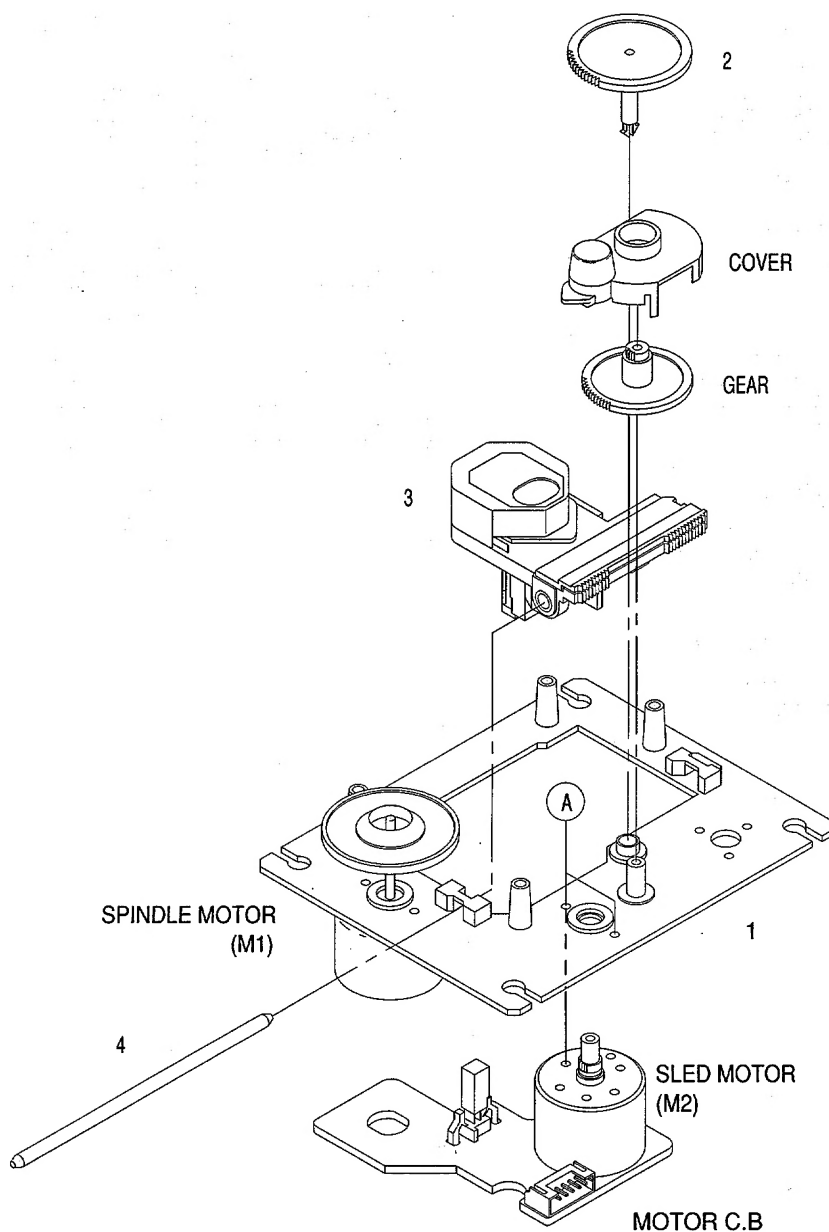


TAPE MECHANISIM PARTS LIST 2 / 2 <CSD-ED99 TN51RV-240>

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO. | PART NO. | KANRI NO. | DESCRIPTION | REF. NO. | PART NO. | KANRI NO. | DESCRIPTION |
|----------|----------------|-----------|-----------------------|----------|----------------|-----------|----------------------|
| 1 | S1-851-070-040 | | FF GEAR ARM SPR(F) | 31 | S1-851-040-110 | | R.C.SPRING (M) |
| 2 | S1-851-070-050 | | FF GEAR ARM COLLAR | 32 | S1-851-160-020 | | FF SW PLATE |
| 3 | S1-851-083-010 | | FF GEAR ARM(R)ASSY | 33 | S1-851-160-060 | | FF SW PLATE SPRING |
| 4 | S1-851-070-030 | | FF GEAR | 34 | S1-851-020-420 | | BUTTON LEVER SPR(P) |
| 5 | S1-851-013-050 | | CHASSIS ASSY | 35 | S1-851-073-010 | | FF GEAR ARM(F)ASSY |
| 6 | S1-821-010-160 | | PAUSE LEVER SPR | 36 | S6-401-011-720 | | LEAF SW MSW-1290CV |
| 7 | S1-851-010-080 | | PAUSE LEVER | 37 | S6-002-030-230 | | MOTOR EG-530AD-2F |
| 8 | S1-851-010-070 | | SIDE BRACKET | 38 | S6-401-010-440 | | LEAF SW MSW-0094CNEK |
| 9 | S1-851-200-020 | | AUTO LEVER(R) | A | S9-P33-200-320 | | DEL TITE SCREW M2-3 |
| 10 | S1-851-200-050 | | SPRING STOPPER | B | S9-180-000-000 | | C TAP SCREW M2-4 |
| 11 | S1-851-200-030 | | AUTO LEVER(R)SPR | C | S9-876-000-000 | | P WASHER 2.1-5-0.5 |
| 12 | S1-851-010-090 | | RECORD SAFETY LEVER | D | S9-889-000-000 | | P WASHER 2.1-3-0.3 |
| 13 | S1-821-100-980 | | PACK SPRING PLATE | E | S9-421-000-000 | | P WASHER 1.2-3-0.25 |
| 14 | S1-851-115-010 | | REEL ASSY | F | S9-C19-173-030 | | TSS 1.7X3 |
| 15 | S1-851-113-010 | | REEL PLATE ASSY | G | S9-888-000-000 | | P WASHER 1.2-3-0.4 |
| 16 | S1-851-200-040 | | AUTO LEVER(F)SPR | H | S9-999-000-090 | | P WASHER 3-8.5-0.13 |
| 17 | S1-851-200-010 | | AUTO LEVER(F) | I | S9-181-000-000 | | C TAP SCREW M2-5 (+) |
| 18 | S1-851-170-070 | | EJECT SLIDE LEVER | J | S9-C19-174-030 | | SCREW, TSS M1.7-4 |
| 19 | S1-851-170-020 | | EJECT SLIDE LEVER SPR | | | | |
| 20 | S1-821-120-230 | | P.K.COLLAR SCREW (A) | | | | |
| 21 | S1-821-010-150 | | PAUSE LEVER | | | | |
| 22 | S1-851-020-210 | | STOP BUTTON LEVER SPR | | | | |
| 23 | S1-851-125-050 | | FLYWHEEL ASSY | | | | |
| 24 | S1-821-120-020 | | M. COLLER SCREW | | | | |
| 25 | S1-921-120-540 | | MOTOR BRACKET | | | | |
| 26 | S1-800-100-220 | | ANTI-VIBRATION FELT | | | | |
| 27 | S1-851-140-150 | | MOTOR PULLEY | | | | |
| 28 | S1-820-130-060 | | MOTOR RUBBER | | | | |
| 29 | S1-851-140-170 | | MAIN BELT | | | | |
| 30 | S1-851-040-080 | | RELEASE PLATE | | | | |

CD MECHANISM EXPLODED VIEW 1 / 1





CD MECHANISM PARTS LIST 1 / 1

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO. | PART NO. | KANRI NO. | DESCRIPTION |
|----------|----------------|-----------|--------------------|
| 1 | 9X-262-620-210 | | MOTOR CHASSIS ASSY |
| 2 | 92-626-907-010 | | GEAR (A) |
| 3 | 87-A90-468-010 | | PICK UP KSS-213C |
| 4 | 92-626-908-010 | | SHAFT SLED |
| A | 97-621-255-150 | | SCREW+P2-3 |

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO. | PART NO. | KANRI NO. | DESCRIPTION |
|---|----------------|----------------|--|
| 1 | 8Z-CH4-908-010 | | IB,EZ (9L)B<EZ> |
| 1 | 8Z-CHE-907-010 | | IB,HR (ECA)B<HR> |
| 1 | 8Z-CHG-906-010 | | IB,LH (ESP)B<LH1,LH,HA> |
|  | 2 | 87-A80-119-010 | AC CORD SET ASSY,AZ<HA> |
|  | 2 | 87-A80-036-010 | AC CORD SET ASSY,E W/FLTR VOL<EXCEPT HA> |
| 3 | 87-A90-312-010 | | PLUG,CONVERSION WTN-1157R1<EXCEPT EZ> |
| 4 | 8Z-CK4-962-010 | | RC UNIT,RC-ZAT04 (VS) |

REFERENCE NAME LIST

ELECTRICAL SECTION

| DESCRIPTION | REFERENCE NAME |
|-------------|--------------------|
| ANT | ANTENNAS |
| C- | CHIP |
| C-CAP | CAP, CHIP |
| C-CAP TN | CAP, CHIP TANTALUM |
| C-COIL | COIL, CHIP |
| C-DI | DIODE, CHIP |
| C-DIODE | DIODE, CHIP |
| C-FET | FET, CHIP |
| C-FOTR | FILTER, CHIP |
| C-JACK | JACK, CHIP |
| C-LED | LED, CHIP |
| C-RES | RES, CHIP |
| C-SFR | SFR, CHIP |
| C-SLIDE SW | SLIDE SWITCH, CHIP |
| C-SW | SWITCH, CHIP |
| C-TR | TRANSISTOR, CHIP |
| C-VR | VOLUME, CHIP |
| C-ZENER | ZENER, CHIP |
| CAP, CER | CAP, CERA-SOL |
| CAP, E | CAP, ELECT |
| CAP, M/F | CAP, FILM |
| CAP, TC | CAP, CERA-SOL |
| CAP, TC-U | CAP, CERA-SOL SS |
| CAP, TN | CAP, TANTALUM |
| CERA FIL | FILTER, CERAMIC |
| CF | FILTER, CERAMIC |
| DL | DELAY LINE |
| E/CAP | CAP, ELECT |
| FILT | FILTER |
| FLTR | FILTER |
| FUSE RES | RES, FUSE |
| MOT | MOTOR |
| P-DIODE | PHOTO DIODE |
| P-SNSR | PHOTO SENSER |
| P-TR | PHOTO TRANSISTOR |
| POLY VARI | VARIABLE CAPACITOR |
| PPCAP | CAP, PP |
| PT | POWER TRANSFORMER |
| PTR, RES | PTR, MELF |
| RC | REMOTE CONTROLLER |
| RES NF | RES, NON-FLAMMABLE |
| RESO | RESONATOR |
| SHLD | SHIELD |
| SOL | SOLENOID |
| SPKR | SPEAKER |
| SW, LVR | SWITCH, LEVER |
| SW, RTRY | SWITCH, ROTARY |
| SW, SL | SWITCH, SLIDE |
| TC CAP | CAP, CERA-SOL |
| THMS | THERMISTOR |
| TR | TRANSISTOR |
| TRIMER | CAP, TRIMMER |
| TUN-CAP | VARIABLE CAPACITOR |
| VIB, CER | RESONATOR, CERAMIC |
| VIB, XTAL | RESONATOR, CRYSTAL |
| VR | VOLUME |
| ZENER | DIODE, ZENER |

MECHANICAL SECTION

| DESCRIPTION | REFERENCE NAME |
|----------------|---------------------|
| ADHESHIVE | SHEET ADHESHIVE |
| AZ | AZIMUTH |
| BAR-ANT | BAR-ANTENNA |
| BAT | BATTERY |
| BATT | BATTERY |
| BRG | BEARING |
| BTN | BUTTON |
| CAB | CABINET |
| CASS | CASSETTE |
| CHAS | CHASSIS |
| CLR | COLLAR |
| CONT | CONTROL |
| CRSR | CURSOR |
| CU | CUSHION |
| CUSH | CUSHION |
| DIR | DIRECTION |
| DUBB | DUBBING |
| FL | FRONT LOADING |
| FLY-WHL | FLYWHEEL |
| FR | FRONT |
| FUN | FUNCTION |
| G-CU | G-CUSHION |
| HDL | HANDOL |
| HIMERON | CLOTH |
| HINGE, BAT | HINGE, BATTERY |
| HLDR | HOLDER |
| HT-SINK | HEAT SINK |
| IB | INSTRUCTION BOOKLET |
| IDLE | IDLER |
| IND, L-R | INDICATOR, L-R |
| KEY, CONT | KEY, CONTROL |
| KEY, PRGM | KEY, PROGRAM |
| KNOB, SL | KNOB, SLIDE |
| LBL | LABEL |
| LID, BATT | LID, BATTERY |
| LID, CASS | LID, CASSETTE |
| LVR | LEVER |
| P-SP | P-SPRING |
| PANEL, CONT | PANEL, CONTROL |
| PANEL, FR | PANEL, FRONT |
| PRGM | PROGRAM |
| PULLY, LOAD MO | PULLY, LOAD MOTOR |
| RBN | RIBBON |
| S- | SPECIAL |
| SEG | SEGMENT |
| SH | SHEET |
| SHLD-SH | SHIELD-SHEET |
| SL | SLIDE |
| SP | SPRING |
| SP-SCREW | SPECIAL-SCREW |
| SPACER, BAT | SPACER, BATTERY |
| SPR | SPRING |
| SPR-P | P-SPRING |
| SPR-PC-PUSH | P-SPRING, C-PUSH |
| T-SP | T-SPRING |
| TERM | TERMINAL |
| TRIG | TRIGGER |
| TUN | TUNING |
| VOL | VOLUME |
| W | WASHER |
| WHL | WHEEL |
| WORM-WHL | WORM-WHEEL |

| サービス技術ニュース | |
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